Introduction

The MS Windows System Backup module of idrive ONE-PLUS provides you with a set of tools to protect your Windows operating system platforms.

This includes an image-based / bare-metal backup feature, that leverages Microsoft's native Wbadmin command-line tool (http://go.microsoft.com/fwlink/?LinkId=140216), and recovery feature, to ensure that your computers are protected even if they are lost or destroyed entirely. The image can be recovered onto a new device if necessary.

Contents

1 Requirements and Limitations

Ensure that the following requirements are met:

- idrive ONE-PLUS Installation

  Make sure that idrive ONE-PLUS is installed on the computer to be backed up.

- Add-on Module Requirement

  Make sure that the Windows System Backup add-on module is enabled for your idrive ONE-PLUS user account.

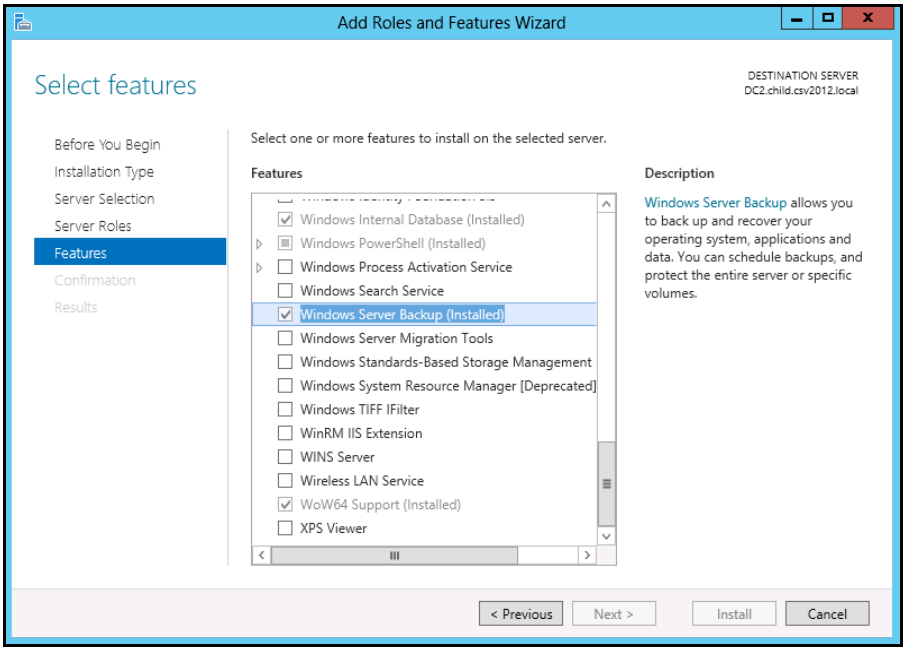
- Backup Quota Requirement

  Make sure that your idrive ONE-PLUS user account has sufficient quota assigned to accommodate the storage for the system backup.

- Windows Server Backup (WSB) Features

  For Windows server platforms, the Windows Server Backup feature must be installed in order for either the system backup to take place.

  Confirm in the Server Manager, the feature can be added by selecting **Add Roles and Features**.



- Latest Service Packs from Microsoft

  Ensure that you have the latest service packs installed.

  Updates to the Windows operating system improve its performance and resolve known issues with Windows Server Backup.

- Temporary Storage Location. It is recommended that the temporary storage location of a MS Windows System backup set is set to a supported local volume, and not to a network volume (e.g. to improve I/O performance).

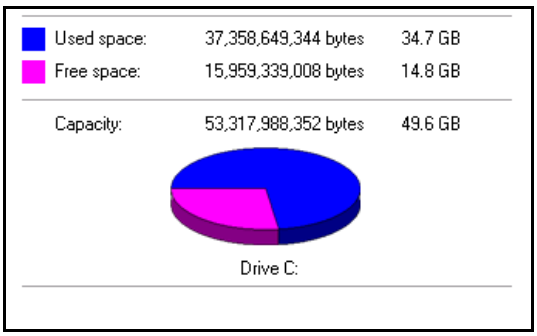
  USB or other local storage

- Disk Space Available in Temporary Storage Location

  Make sure that there are sufficient disk spaces available in the storage location for the backup set.

  For a system backup, it will typically require disk space of the total used size of all volumes selected for backup.

  Note: *Used space, not free space of all volumes selected for backup.*



- Maximum Supported Disk Size

  For Windows Vista, or 2008 / 2008 R2 Server, source volumes with size greater than 2 TB (e.g. 2040 GB - 2 MB = 2088958 MB) are not supported.

  This limitation is related to the .vhd file size limit.

  Note: *This limitation does not apply to Windows 8 or newer releases of Windows platforms.*

Restore Consideration

- Windows Account Permission

  To perform recovery using Windows Server Backup, the operating system account that you use, must be a member of the Backup Operators or Administrators group.

- Disk Size

  For recovery of operating system to a new hard disk, ensure that the disk that you restore to is at least the size of the disk that contained the volumes that were backed up, regardless of the size of those volumes within.

  For example, if there was only one volume of size 100 GB created on a 1 TB disk during backup, then you should use a disk that is at least 1 TB when recovering.

- Windows Recovery Environment

  For recovery of operating system, the processor architecture for a given instance of Windows Recovery Environment and the computer whose system you are trying to restore must match.

  For example, Windows Recovery Environment for an x64 based version of the operating system will only work on an x64 based server.

- Caution on Recovery to Dissimilar Hardware

This recovery method requires the restore target system to have similar hardware and the exact same boot type as the source system from which the backup was taken. Disk adapters are especially sensitive. If dissimilar hardware is used, the restored system might not be boot.

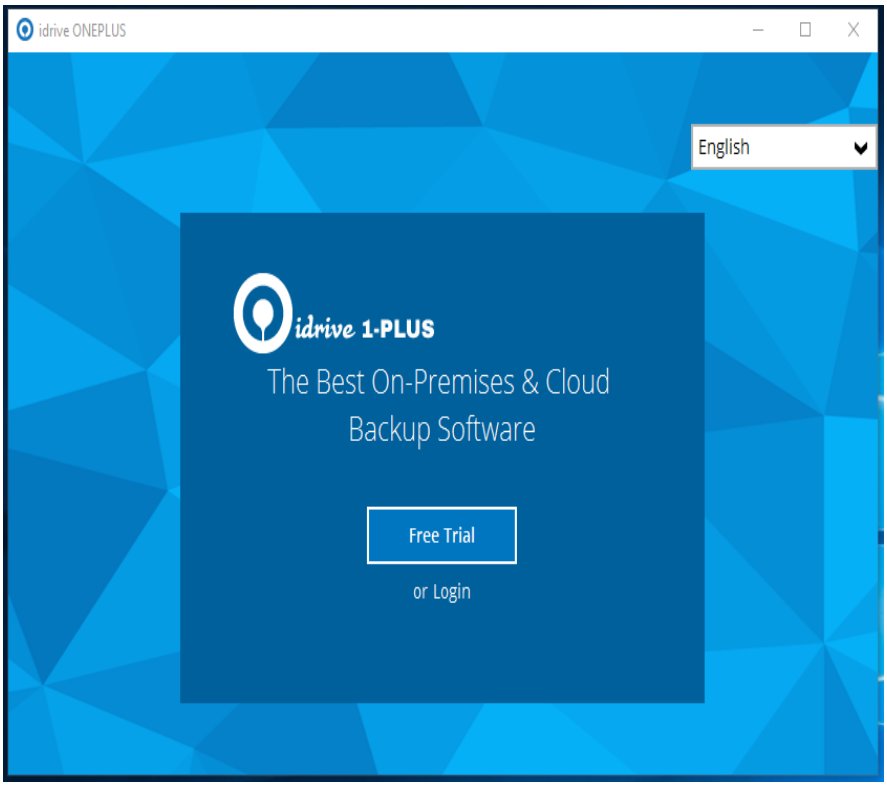
For example, if the system backup image was taken from a BIOS-based system, the recovery environment must be booted in BIOS mode.

2 Starting idrive ONE-PLUS

2.1 Login to idrive ONE-PLUS

1. Login to the idrive ONE-PLUS application user interface.

   Double click the idrive ONE-PLUS desktop icon to launch the application.



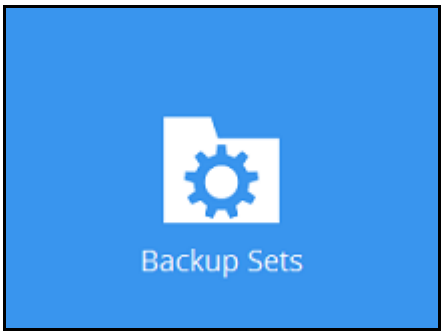
2. Enter the **Login name** and **Password** of your idrive ONE-PLUS account.

3. Click **OK** afterward to login to idrive ONE-PLUS.

3 Configuring a MS Windows System Backup Set

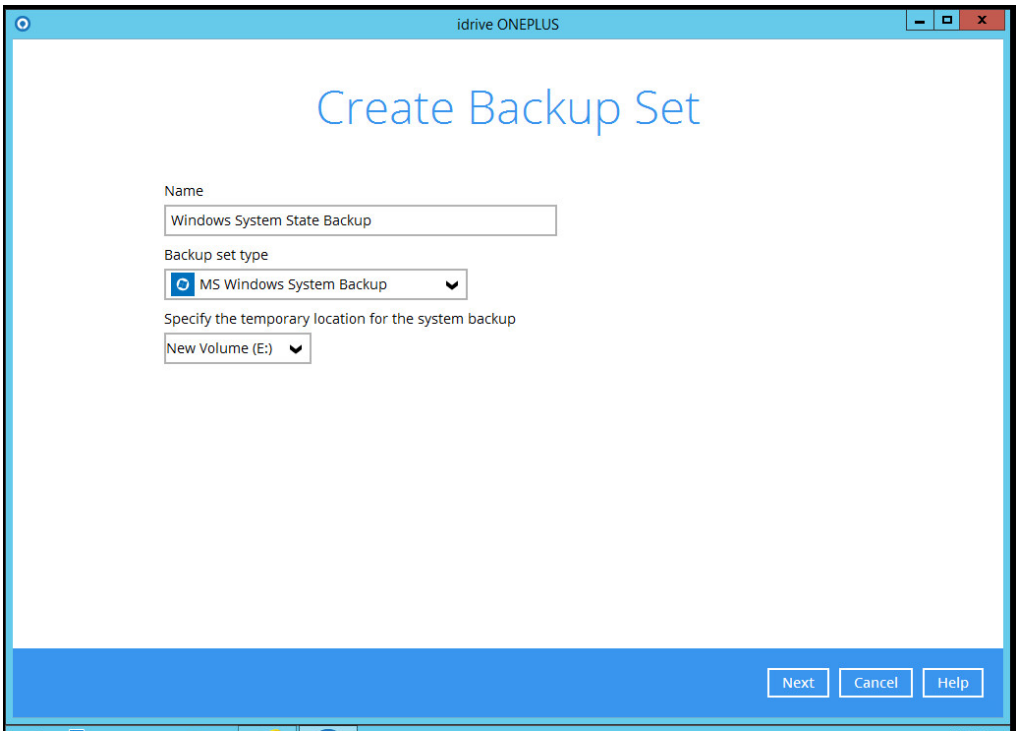
3.1 Create a MS Windows System Backup Set

1. In the idrive ONE-PLUS main interface, click **Backup Sets**.



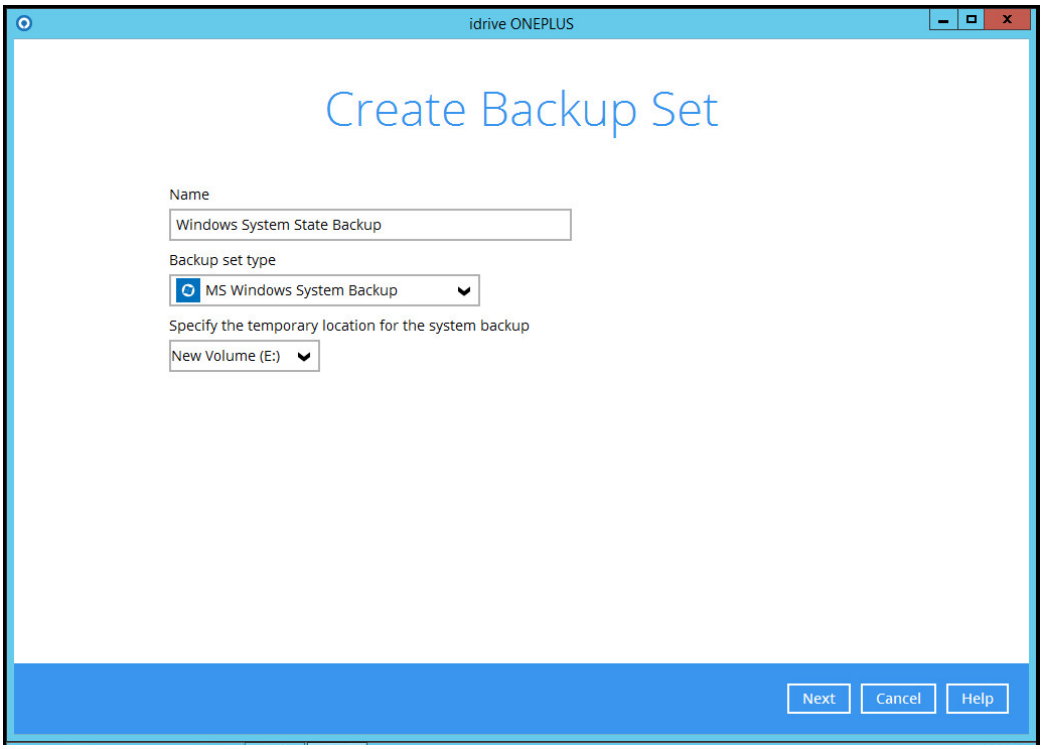
2. Create a MS Windows System backup set by clicking + next to **Add new backup set**.

3. Select **MS Windows System Backup** as the **Backup set type**; then enter a **Name** for your backup set.



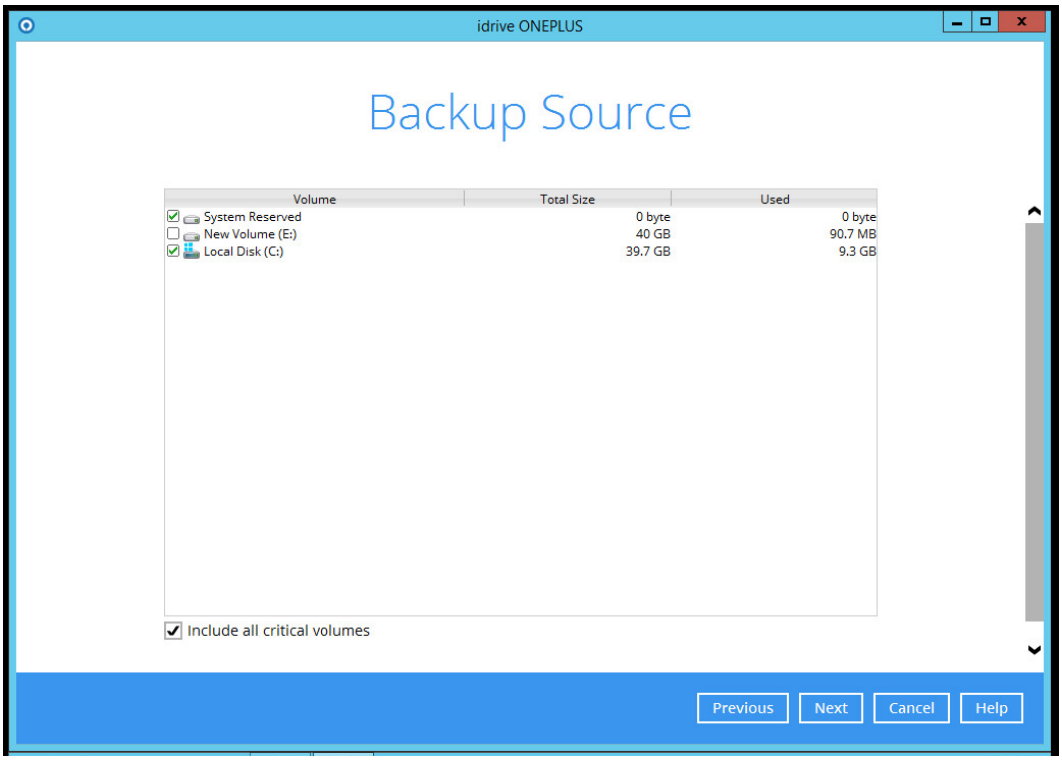
4. Select the location where you would like to store the system image before generating the backup data.

   Select a local volume from the dropdown menu.



5. In the Backup Source menu, select the volume(s) which you would like to backup.

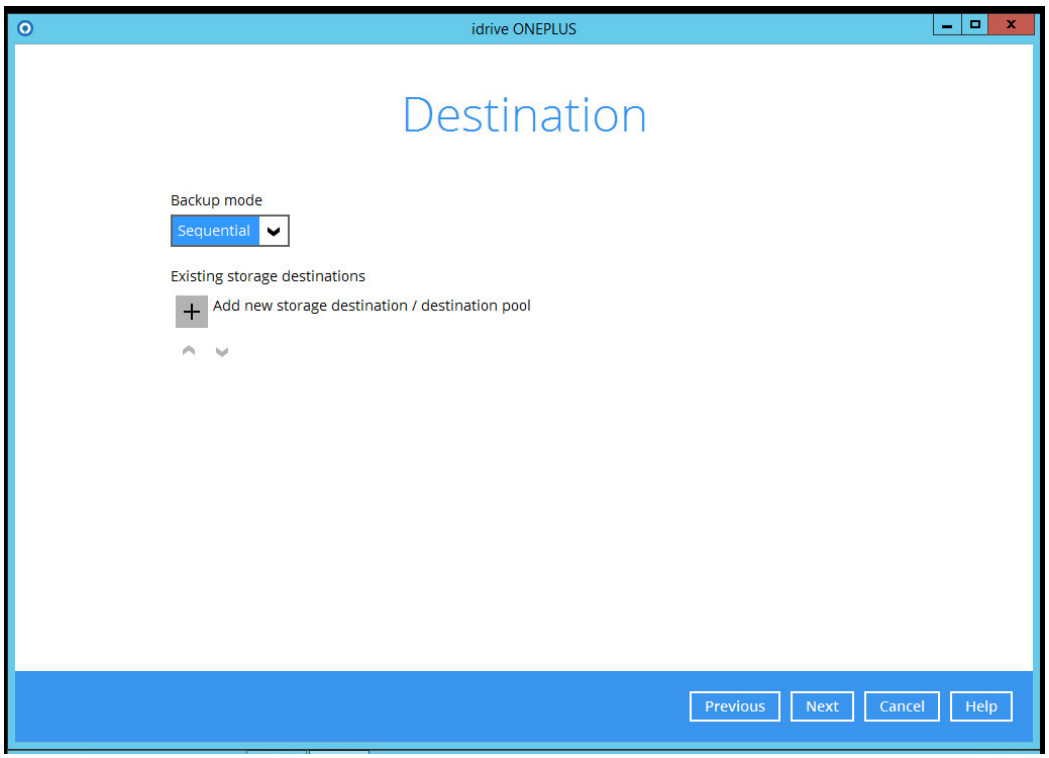
   Enable the **Include all critical volumes** option to select all critical volumes for backup automatically. This will ensure that the backup image can be used for full-system / bare-metal recovery.



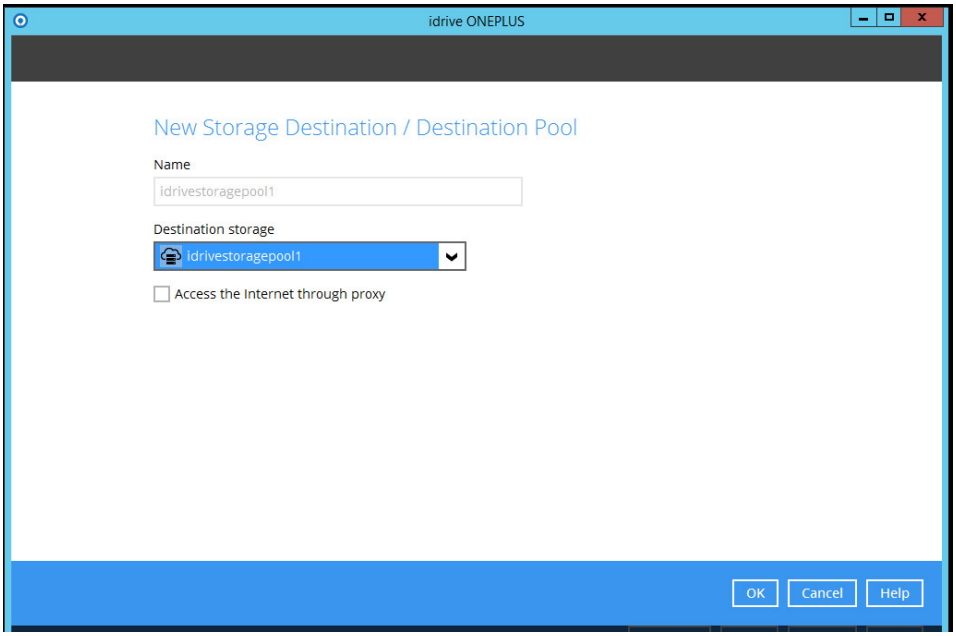
Click **Next** to proceed.

6. In the Schedule menu, configure a backup schedule for backup job to run automatically at your specified time interval. Click **Add** to add a new schedule, then click **Next** to proceed afterward.

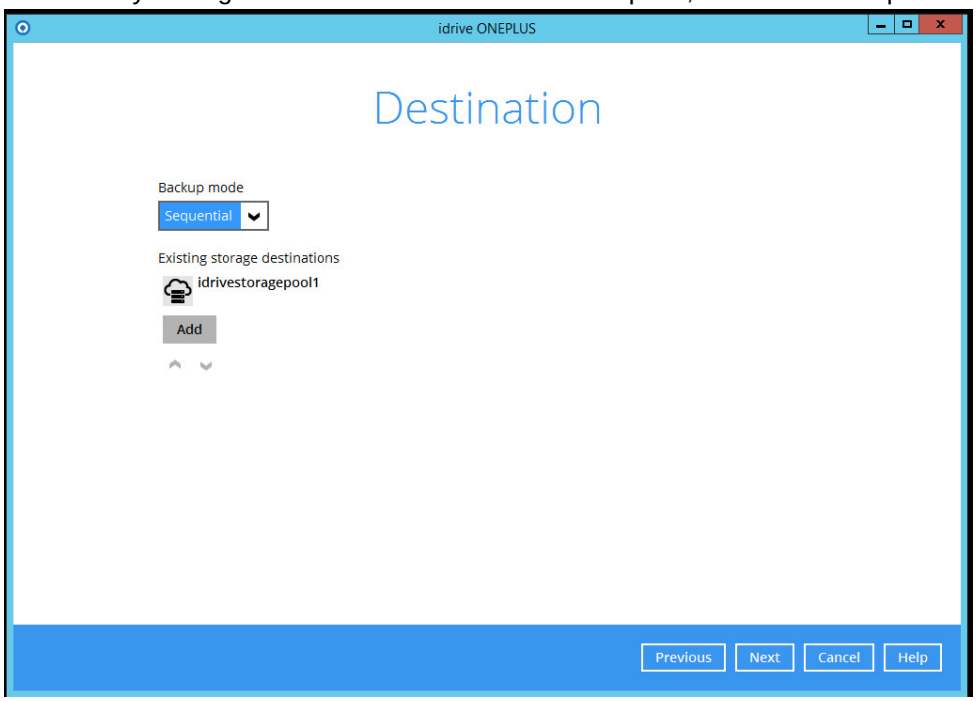
7. In the Destination menu, select a backup destination where the backup data will be stored. Click the "+" icon next to **Add new storage destination / destination pool**.



8. Enter a **Name** for the backup destination, and select the **Type** and **Destination storage**.

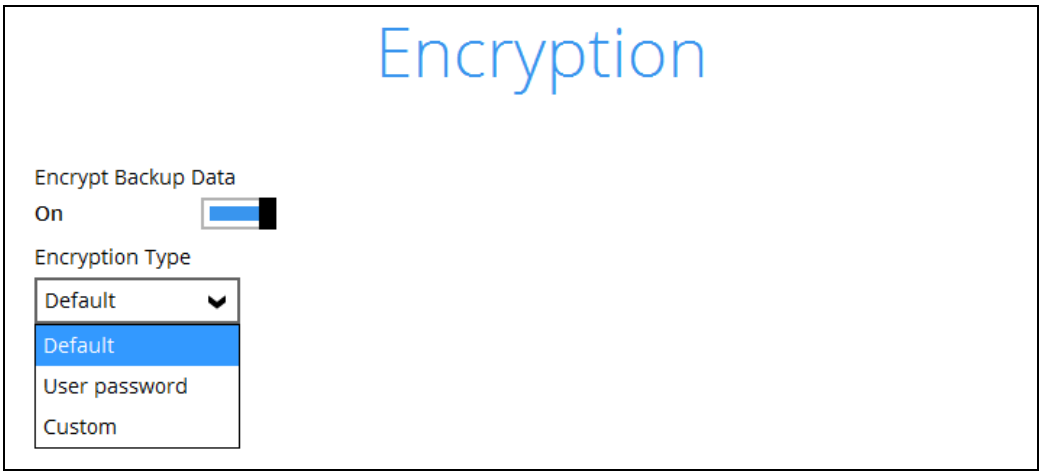


9. Continue by adding another destination for the backup set, or click **Next** to proceed.



Note: *Multiple backup destinations can be configured for a single backup set.*

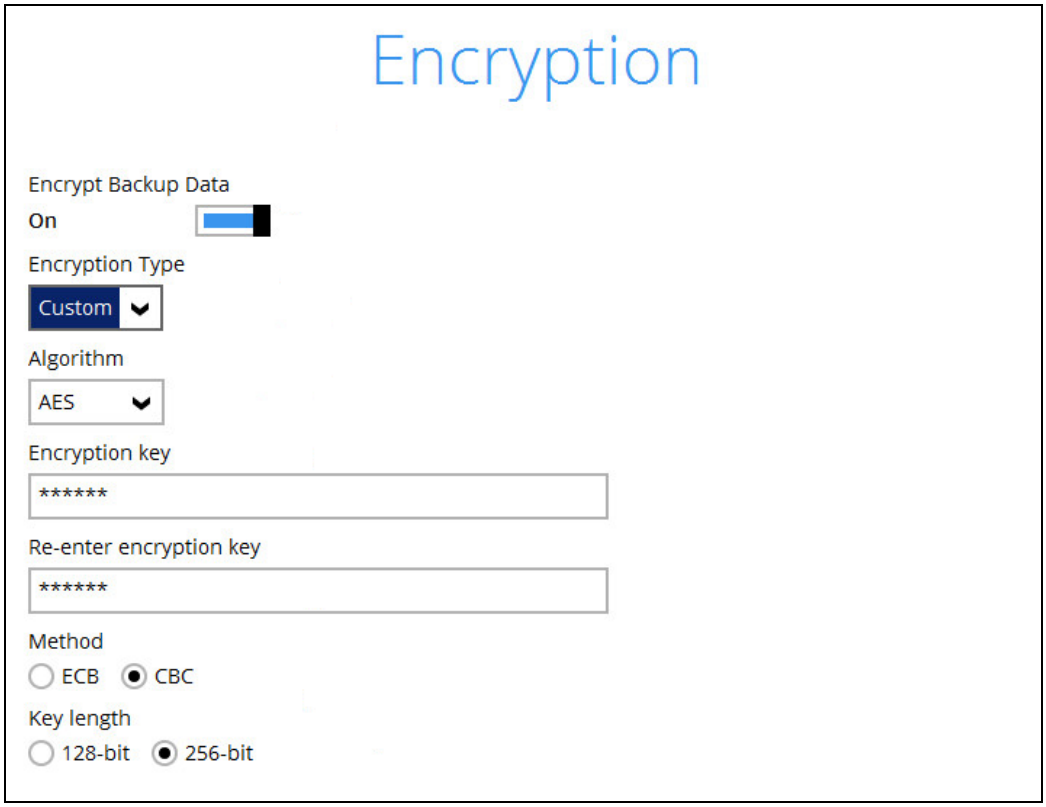
10. In the Encryption window, the default **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



You can choose from one of the following three Encryption Type options:

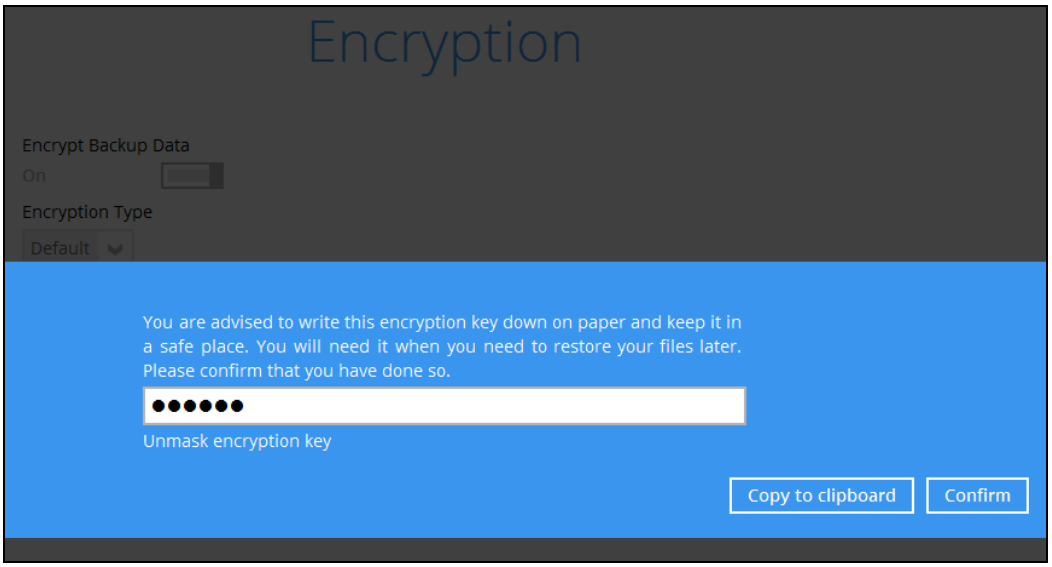
- **Default** – an encryption key with 44 alpha numeric characters will be randomly generated by the system
- **User password** – the encryption key will be the same as the login password of your Idrive ONE-PLUS at the time when this backup set is created. Please be reminded that if you change the Idrive ONE-PLUS login password later, the encryption keys of the backup sets previously created with this encryption type will remain unchanged.

- **Custom** – you can customize your encryption key, where you can set your own algorithm, encryption key, method and key length.



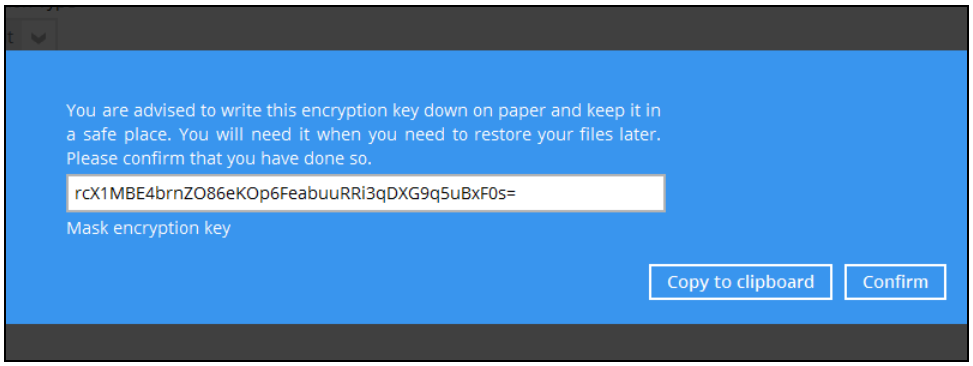
Click **Next** when you are done setting.

11. If you have enabled the Encryption Key feature in the previous step, the following pop-up window shows, no matter which encryption type you have selected.



The pop-up window has the following three options to choose from:

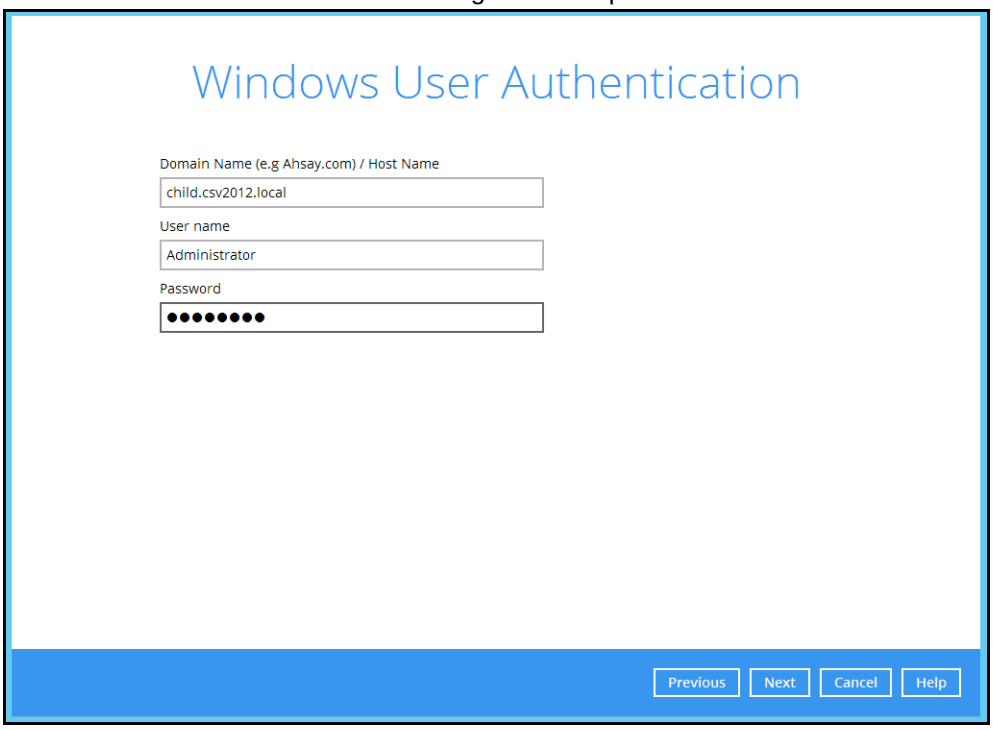
- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.

- **Confirm** – Click to exit this pop-up window and proceed to the next step.

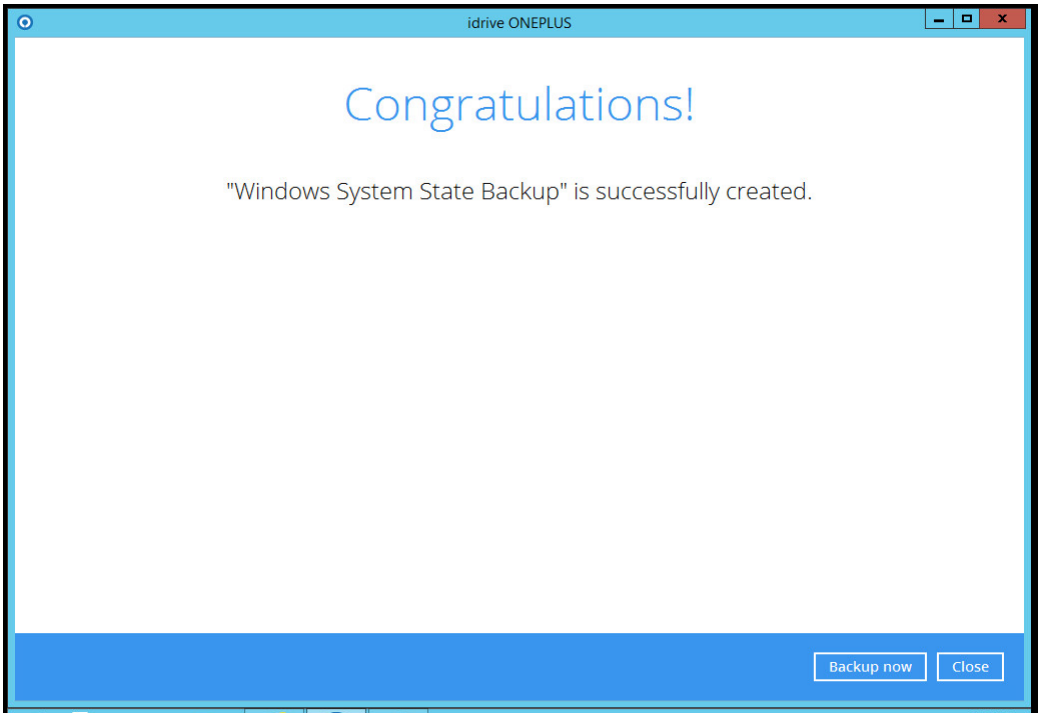
12. Enter the **Domain Name / Host Name** of the computer, **User Name** and **Password** of the Windows account that will be running the backup.



Note: *This menu will only be displayed if a backup schedule is configured in the previous step.*

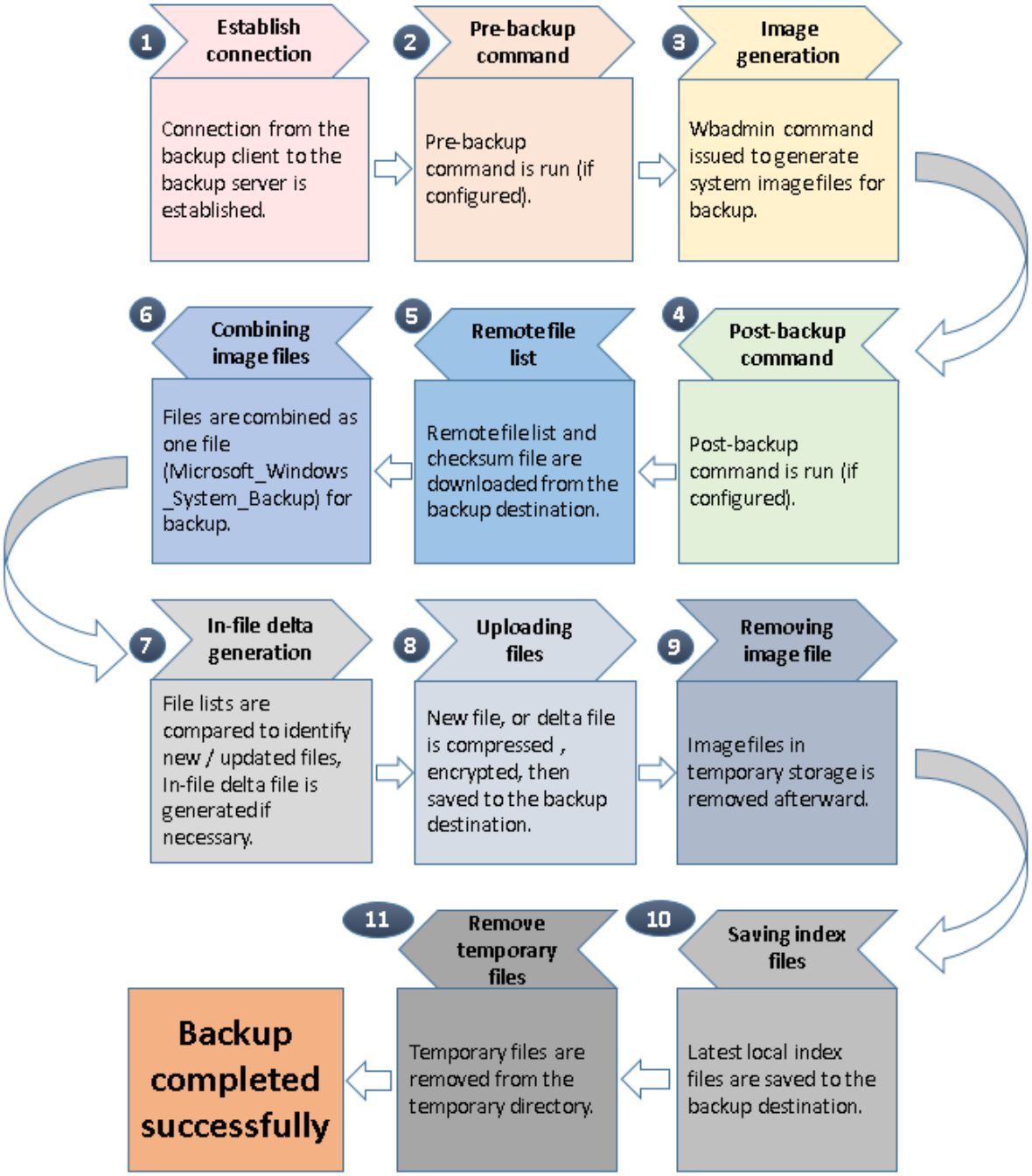
13. Click **Next** to create the backup set.

14. The following screen is displayed when the new MS Windows System backup set is created successfully.



4 Overview on the Backup Process

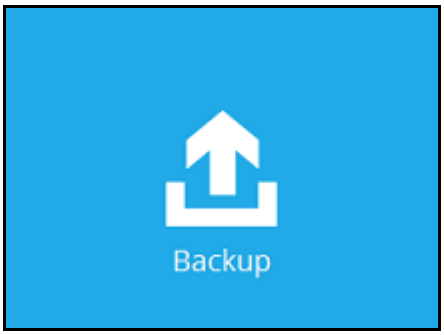
The following steps are performed during a MS Windows System backup job.



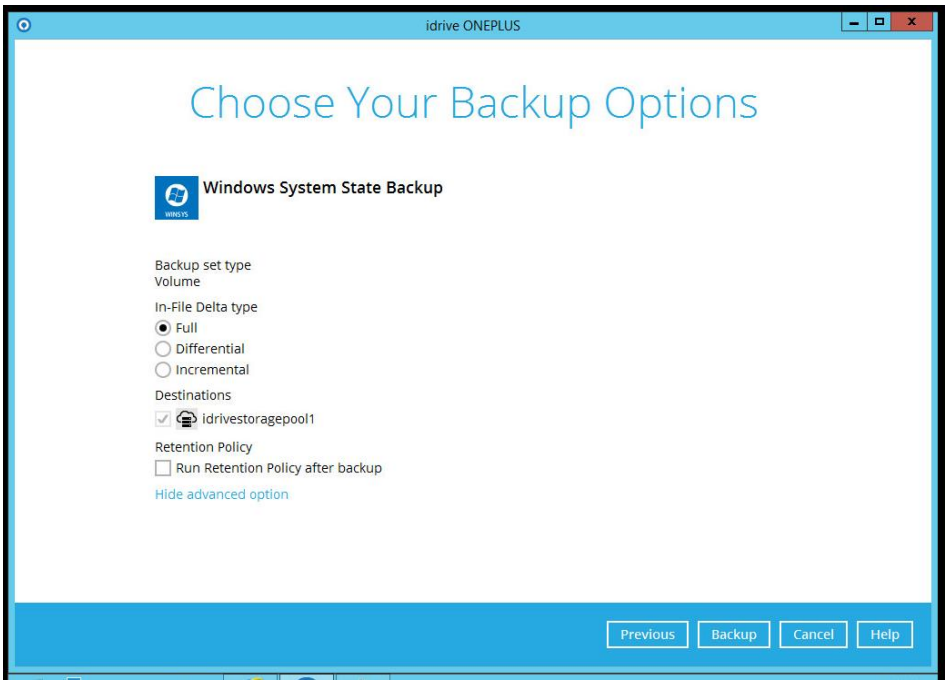
5 Running a Backup

5.1 Start a Manual Backup

1. Click the **Backup** icon on the main interface of idrive ONE-PLUS.

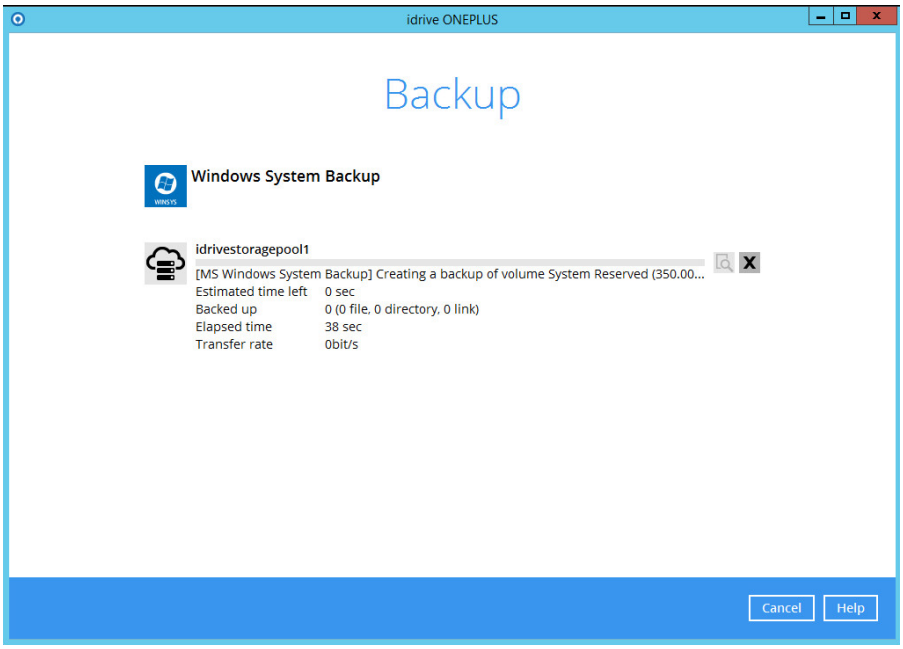


2. Select the backup set which you would like to start a backup for.



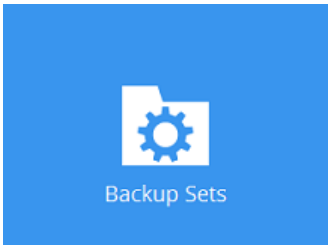
3. If you would like to modify the In-File Delta type, Destinations and Retention Policy Settings, click **Show advance option**.

4. Click **Backup** to start the backup.



5.2 Configure Backup Schedule for Automated Backup

1. Click the Backup Sets icon on the idrive ONE-PLUS main interface.



2. Select the backup set that you want to create a backup schedule for.
3. Click **Backup Schedule**, then create a new backup schedule by clicking **Add**.
4. Configure the backup schedule settings, then click **OK** to proceed.
5. Click **Save** to confirm your settings.

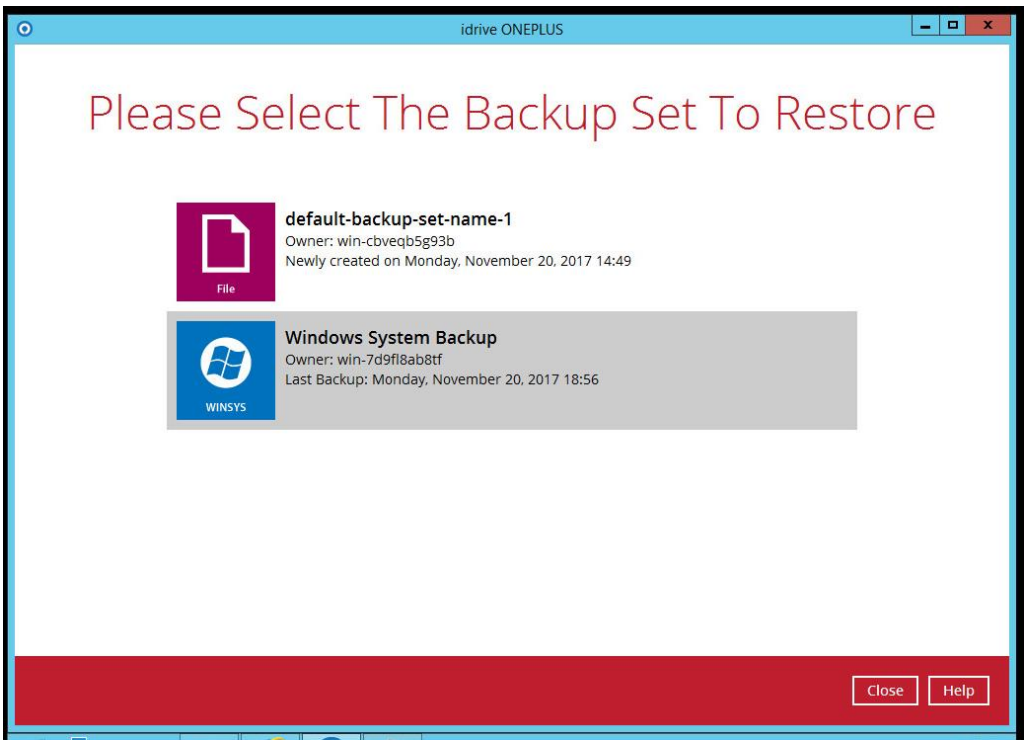
6 Restore with a MS Windows System Backup Set

6.1 Login to idrive ONE-PLUS

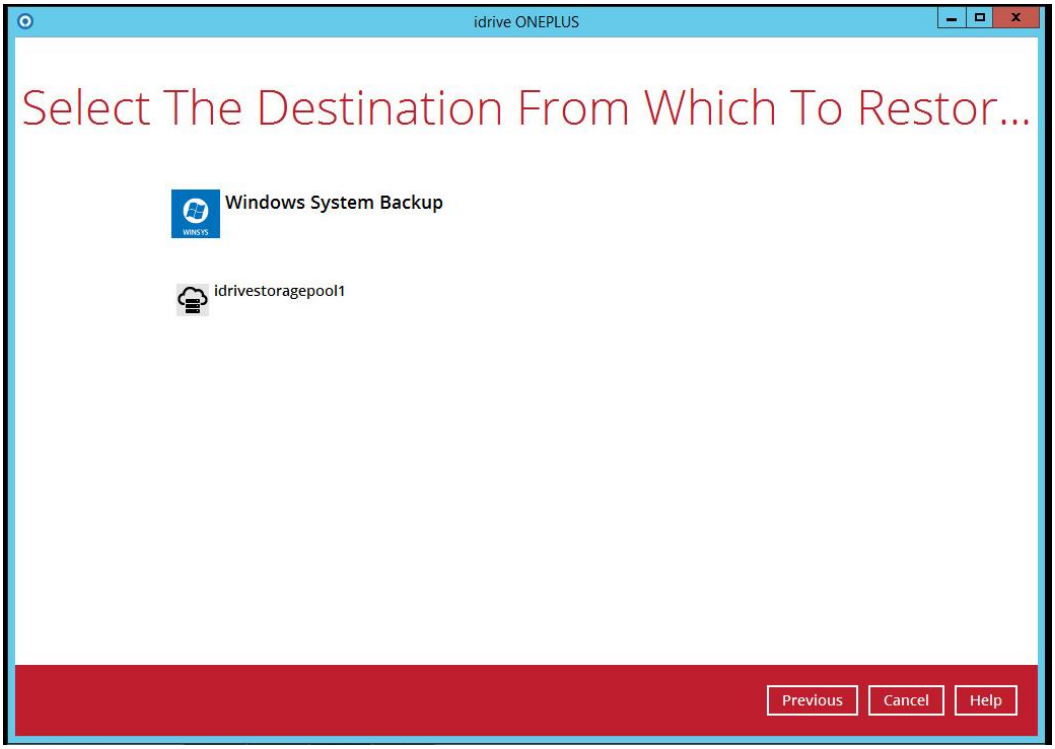
6.2 Restore the System Image

1. Click the **Restore** icon on the main interface of idrive ONE-PLUS.

2. Select the backup set that you would like to restore the system image from.

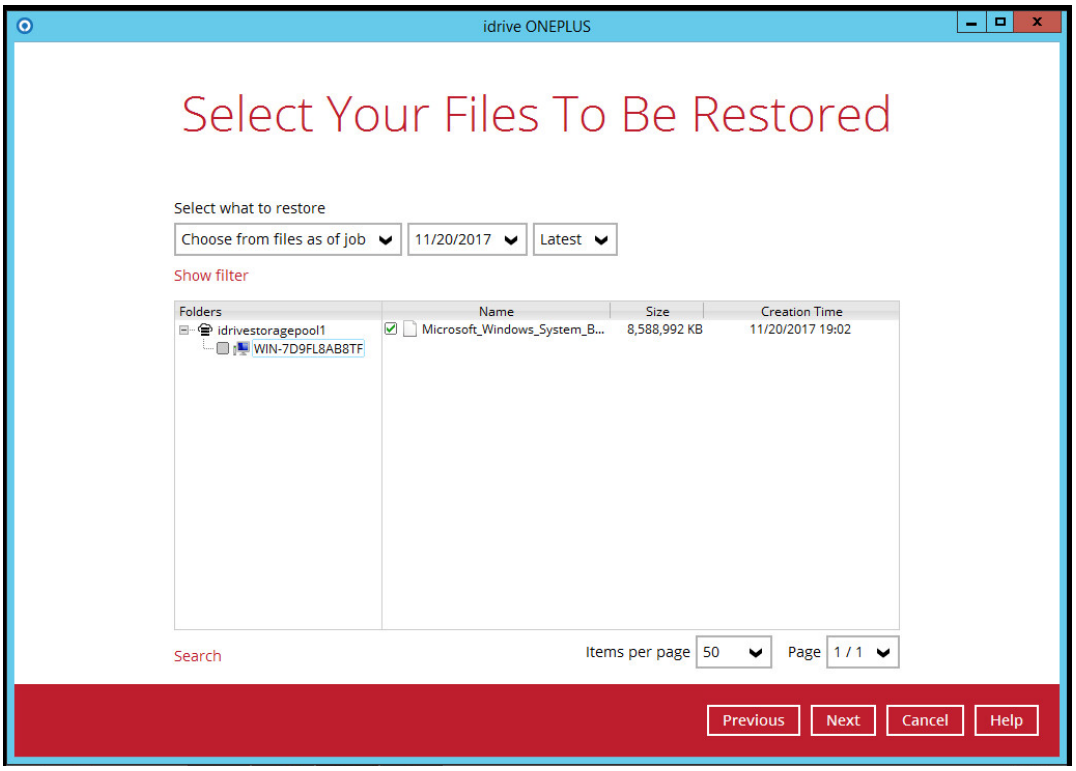


3. Select the backup destination that contains the system image that you would like to restore.



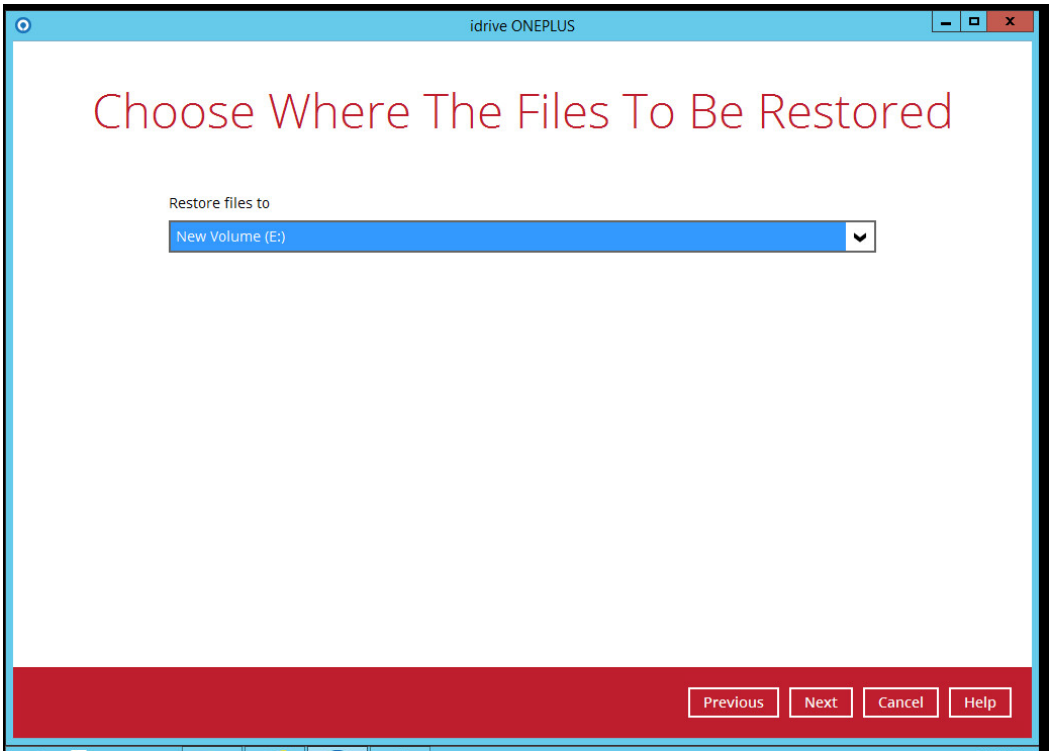
4. Select to restore from a specific backup job, or the latest job available from the **Select what to restore** drop down menu.

5. Select **Microsoft_Windows_System_Backup**, then click **Next** to proceed.

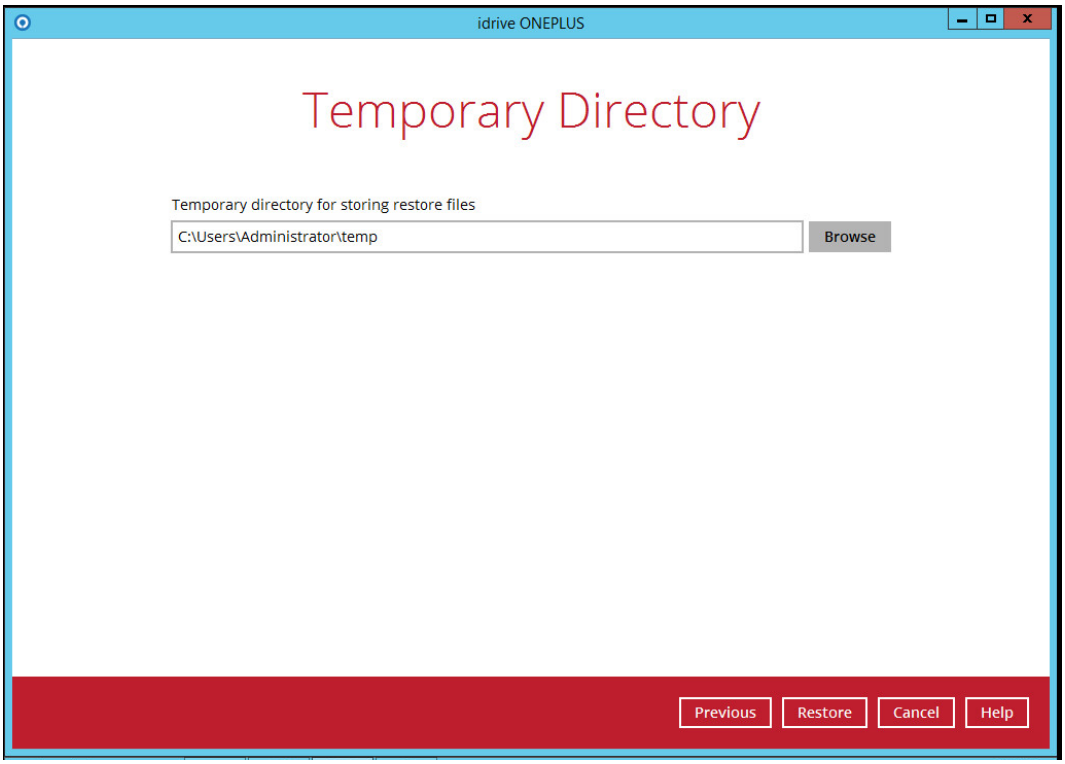


6. Select to restore the system image to a local volume or to a removable drive.

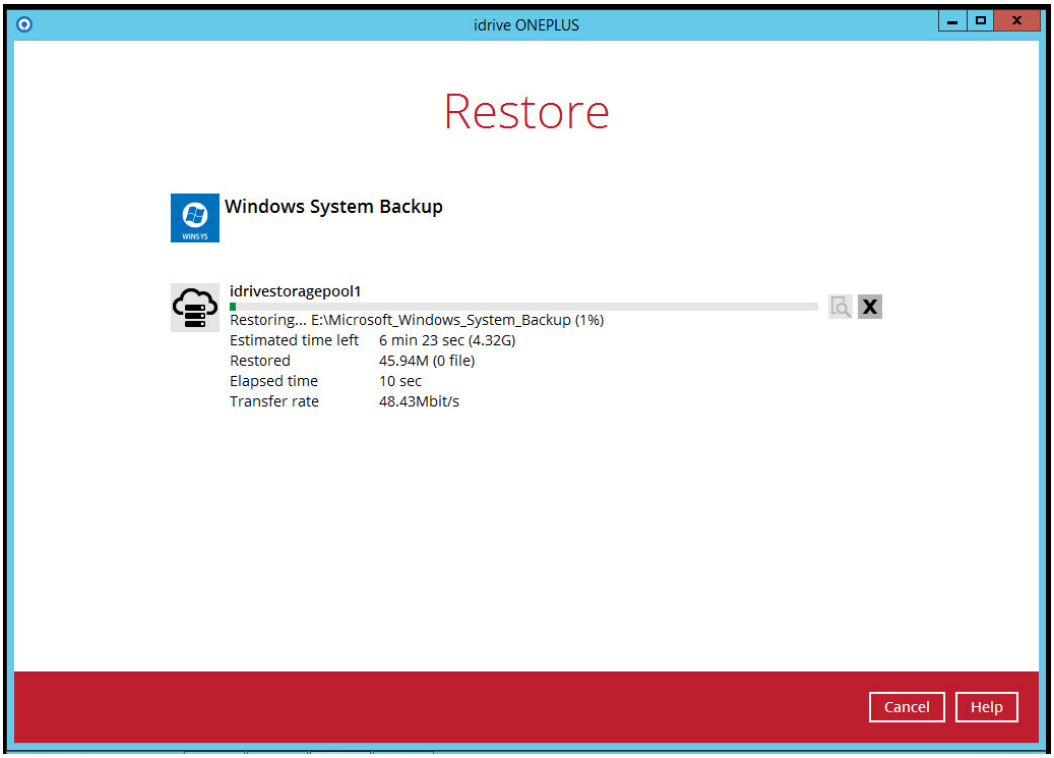
Click **Next** to proceed.



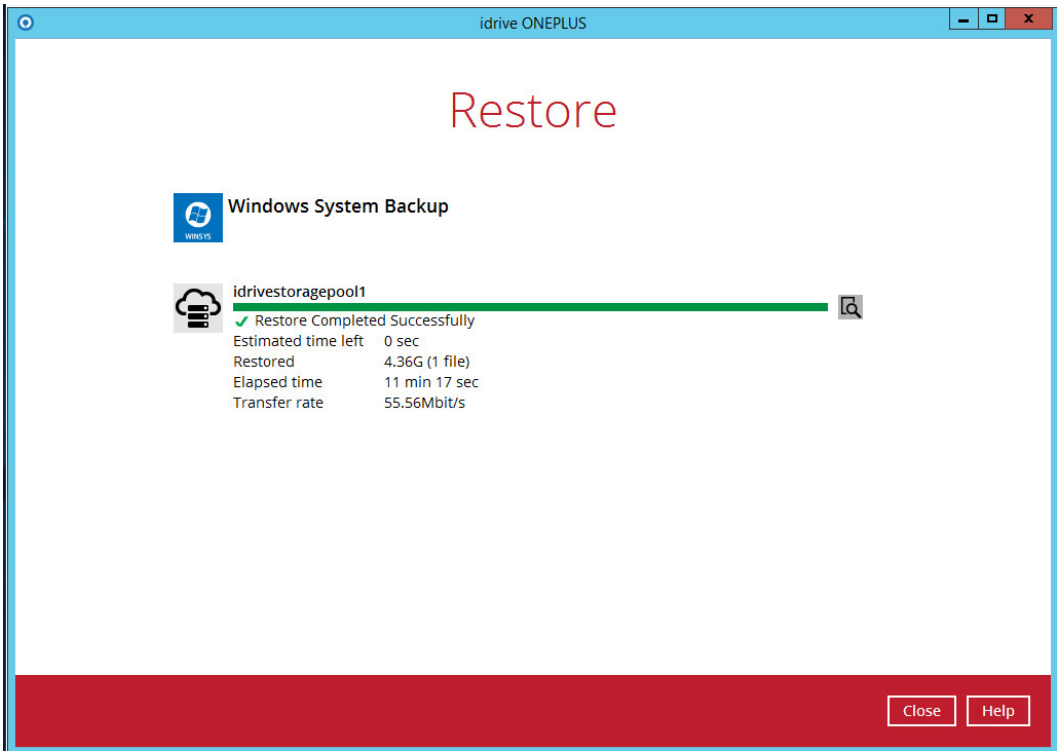
7. Select the temporary directory for storing temporary files.



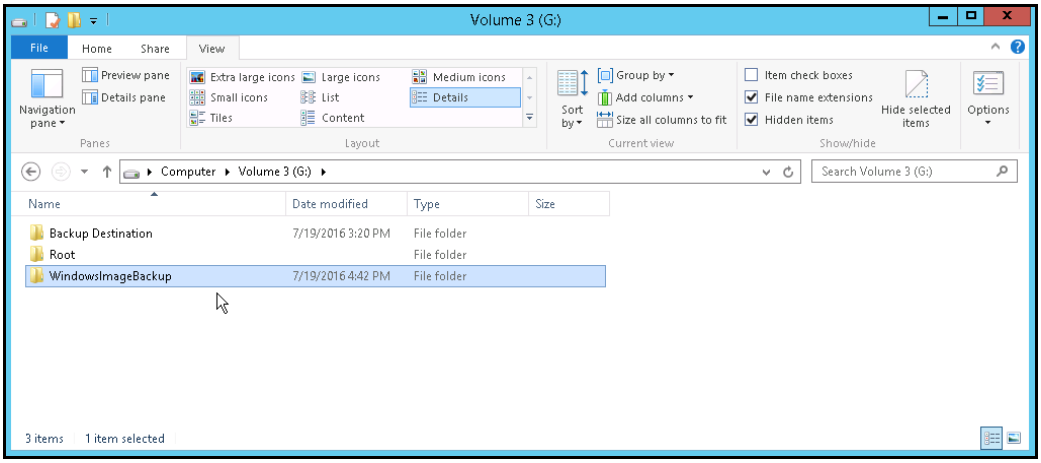
8. Click **Restore** to start the restoration.



9. The following screen is displayed when the system image files are restored successfully.



10. The restored system image files are stored in the **WindowsImageBackup** folder in the restore location.



Important: In addition to the system image files, the **WindowsImageBackup** folder includes catalog files that contain information about all backups in there up to the current backup, and MediaID, that contains the identifier for the backup storage location.

This information is required to perform a recovery. Do not alter the directory structure or delete any file / folder within the **WindowsImageBackup** folder.

11. Copy the **WindowsImageBackup** folder with its content to the server that you want to perform the restore for, or copy the folder to a network drive that is accessible to the server that you want to perform the restore for.

    WindowsImageBackup folder must be stored at the root level of a volume (e.g. top-most level), unless you are copying the folder to a network drive.

12. Continue to the next section of the guide.

6.3 Recovering Your Server

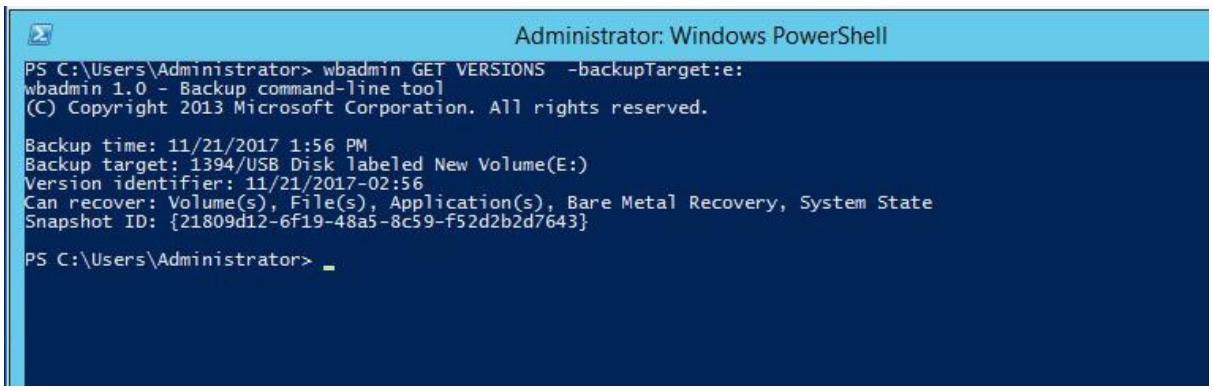
For server platforms such as Server 2008 / 2008 R2 / 2012 / 2012 R2, you can recover individual files, folders, volumes, application, application data, operating system, or full-system (bare-metal) with the following tools:

Tool	What you can recover
Recovery wizard (in Windows Server Backup)	Files, folders, volumes, application, and application data.
Windows setup disc / Windows Recovery Environment (Windows RE)	Operating system (critical volume), and full server recovery (all volumes).

Note: *You can also perform the above tasks using wbadmin command. For the syntax of the command, refer to the following: http://go.microsoft.com/fwlink/?LinkId=140216*

To determine what can be recovered from your restored system image, enter the following command in an elevated powershell command prompt:

Example (system image restored to E: volume):



For non server platforms such as Windows 7 / 8 / 8.1 / 10, you can recover perform a full-system (bare-metal) with the following tools:

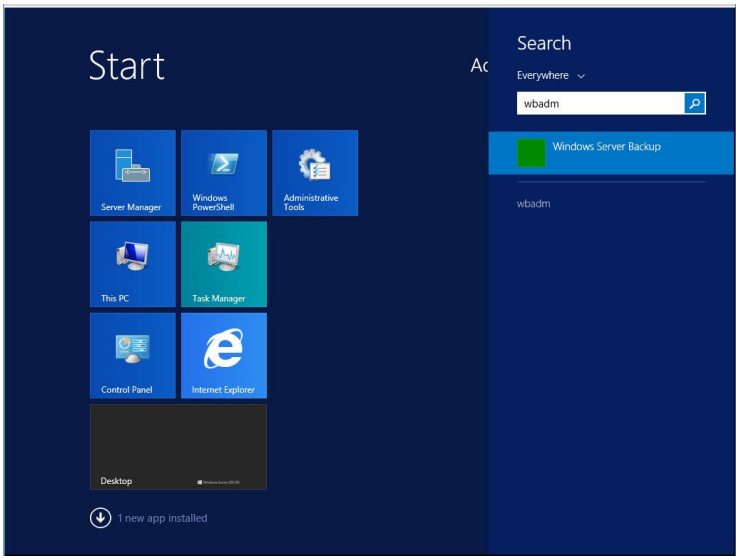
Tool	What you can recover
Advanced startup option (in safe mode)	Full system recovery.
Advanced startup option (Windows installation media)	Full system recovery.

Note: *You can also perform the above tasks using wbadmin command. For the syntax of the command, refer to the following: http://go.microsoft.com/fwlink/?LinkId=140216*

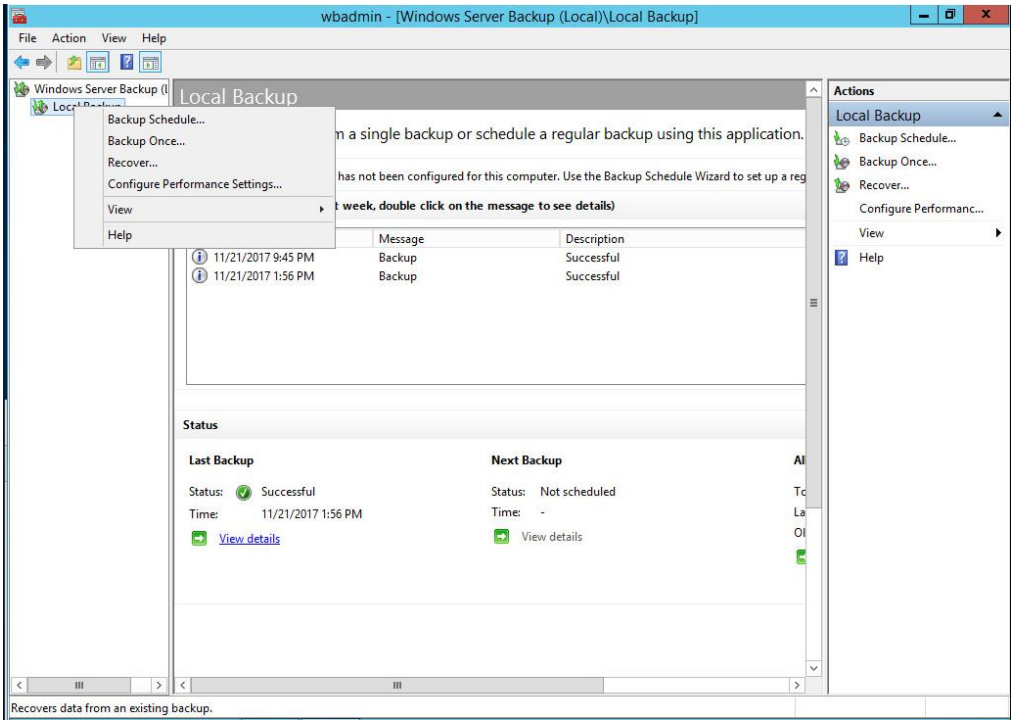
6.3.1 Recover Files and Folders

To recover files and folders using the Recovery Wizard in the Windows Server Backup user interface.

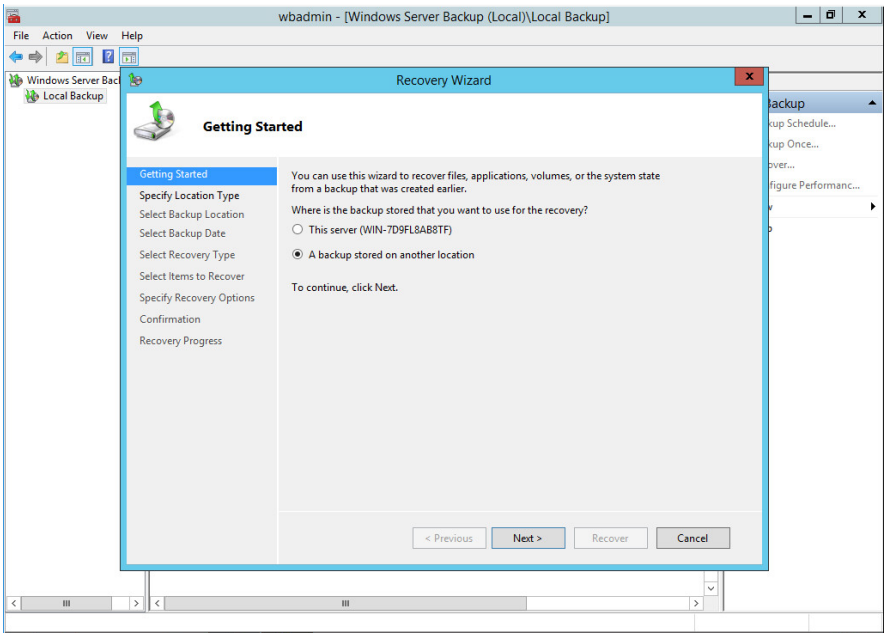
1. Open **Windows Server Backup**.



2. Right Click on Local Backup, **and Click on Recover**

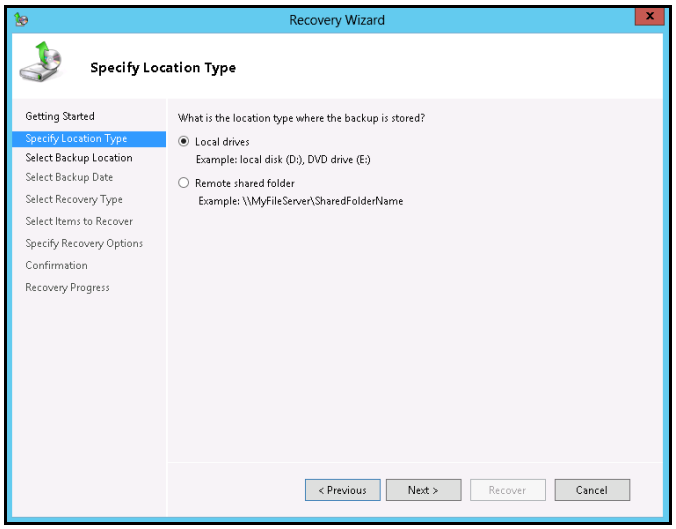


3. On the **Getting Started page**, select **A backup stored on another location**, then click **Next**.

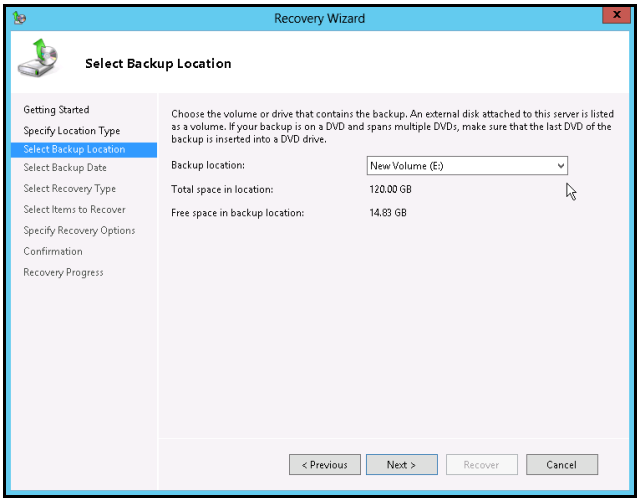


4. On the **Specify Location Type** page, select

- Click **Local drives**, if the system image was copied to a local volume on the server.
- Click **Remote shared folder**, if the system image was copied to a network path accessible to this server.

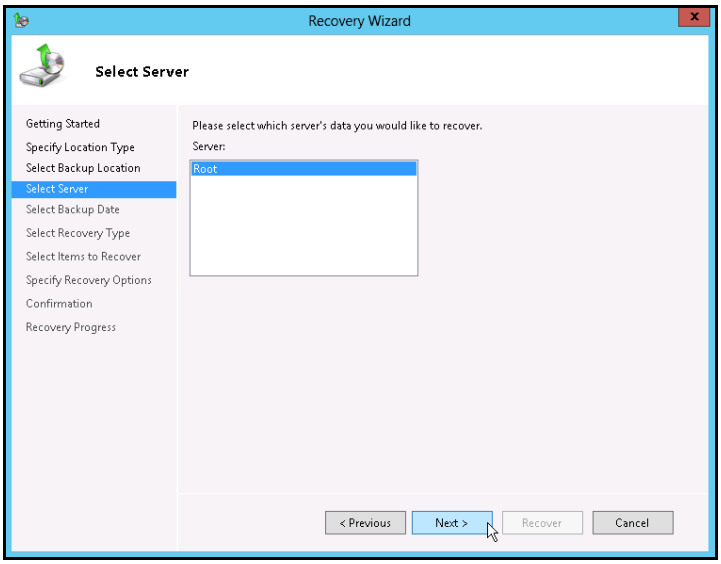


5. On the **Select Backup Location** page, select the volume that contains the system image file.

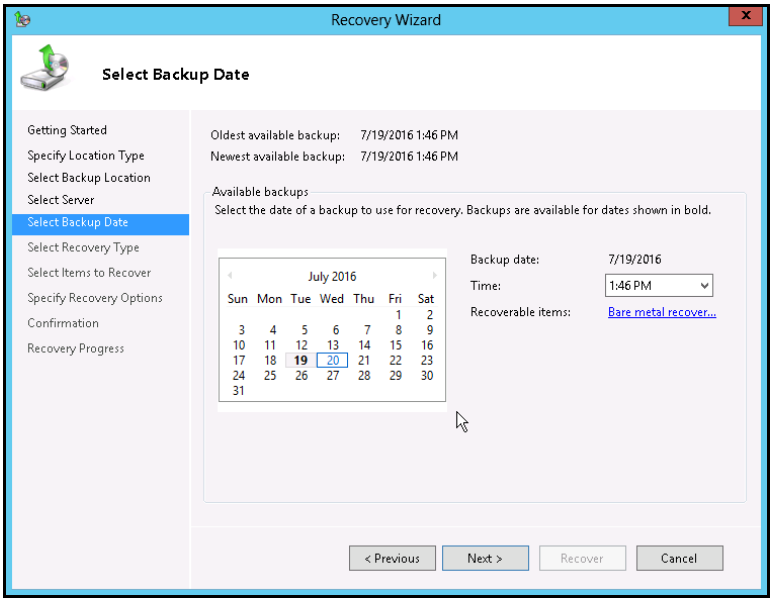


Note: *Assuming that the* ***WindowsImageBackup*** *folder was copied to the following E:* ***WindowsImageBackup***

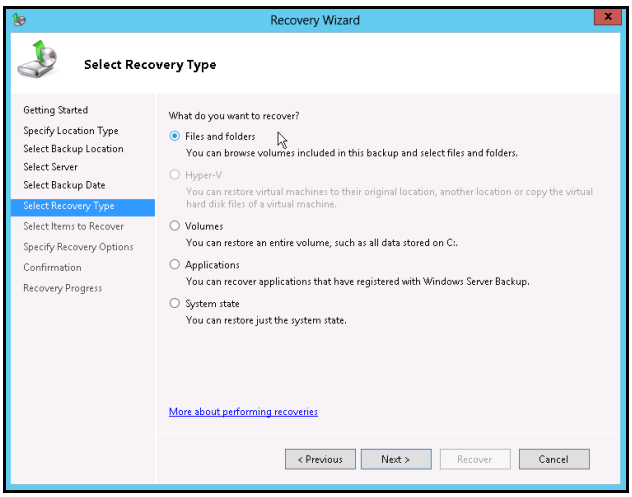
6. On the **Select Server** page, select the server whose data you want to recover.



7. On the **Select Backup Date** page, select the point in time of the backup you want to restore from.

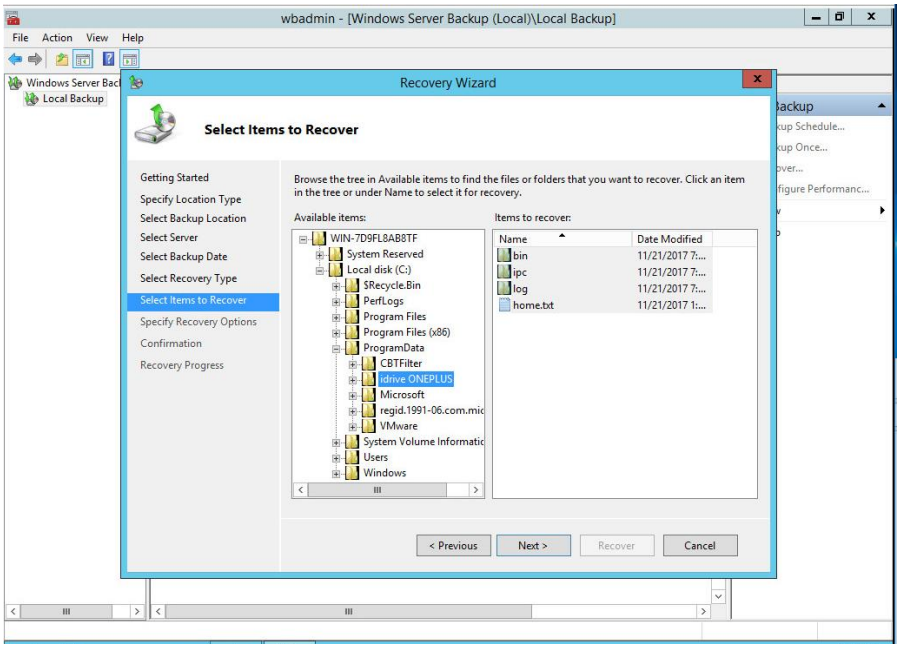


8. On the **Select Recovery Type** page, click **Files and folders**.



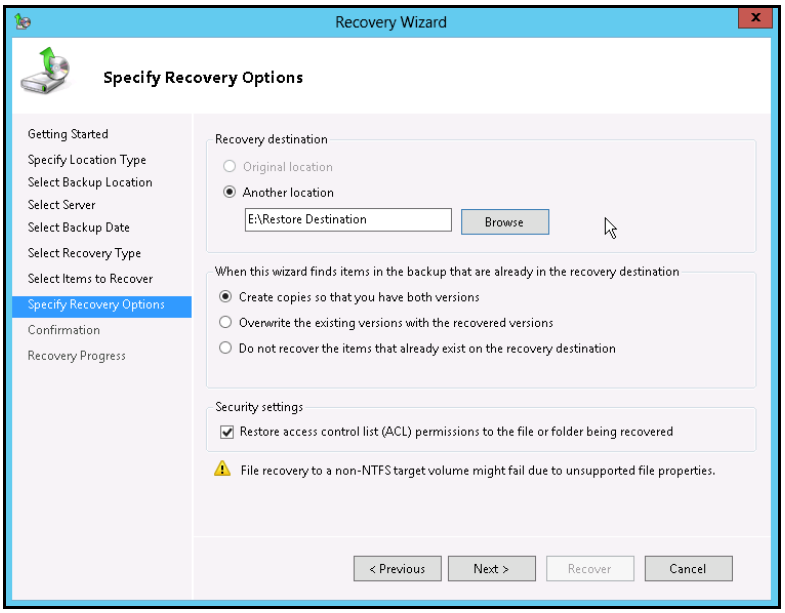
9. On the **Select Items to Recover** page, under **Available items**, expand the list until the folder you want is visible.

   Click a folder to display the contents in the adjacent pane, click each item that you want to restore.



10. On the **Specify Recovery Options** page, under **Recovery destination**, select **Alternate location**.

    Type the path to the location, or click **Browse** to select it.

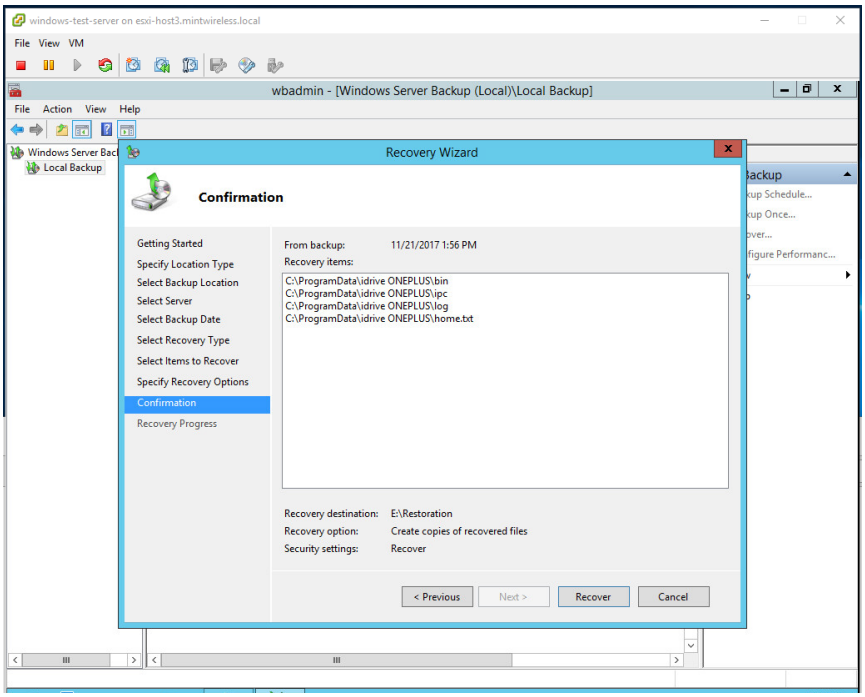


    Modify the **When this wizard finds items in the backup that are already in the recovery destination** setting, and the **Security settings** if necessary.

    Click **Next** to proceed.

11. On the **Confirmation** page, review the details, and then click **Recover** to restore the specified items.

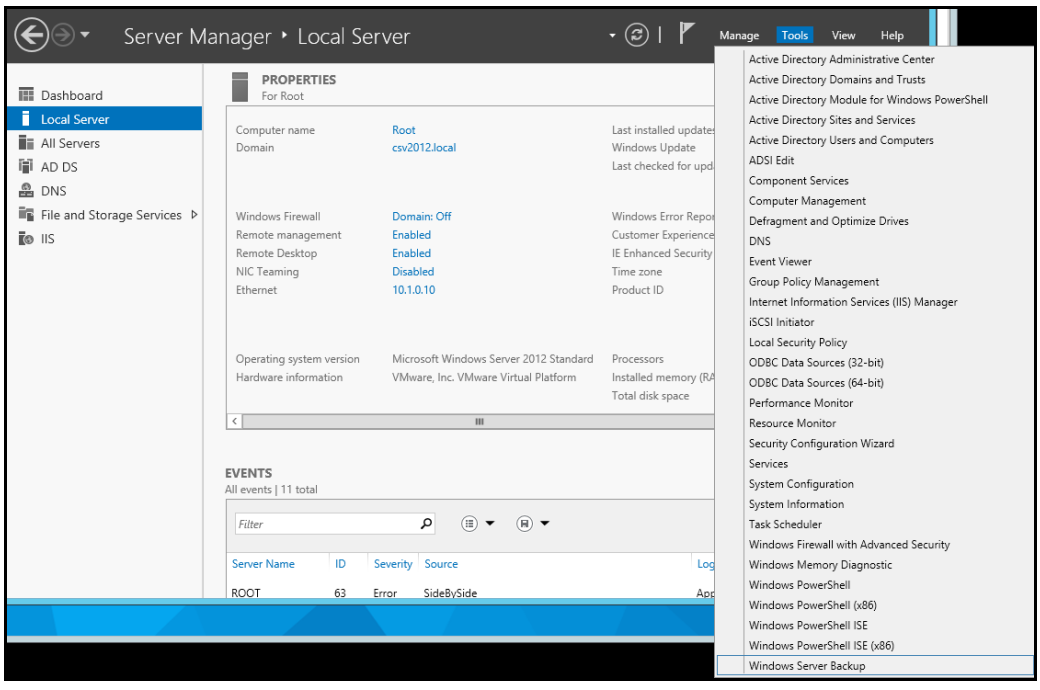
12. On the **Recovery progress** page, the status and result of the recovery operation is displayed.



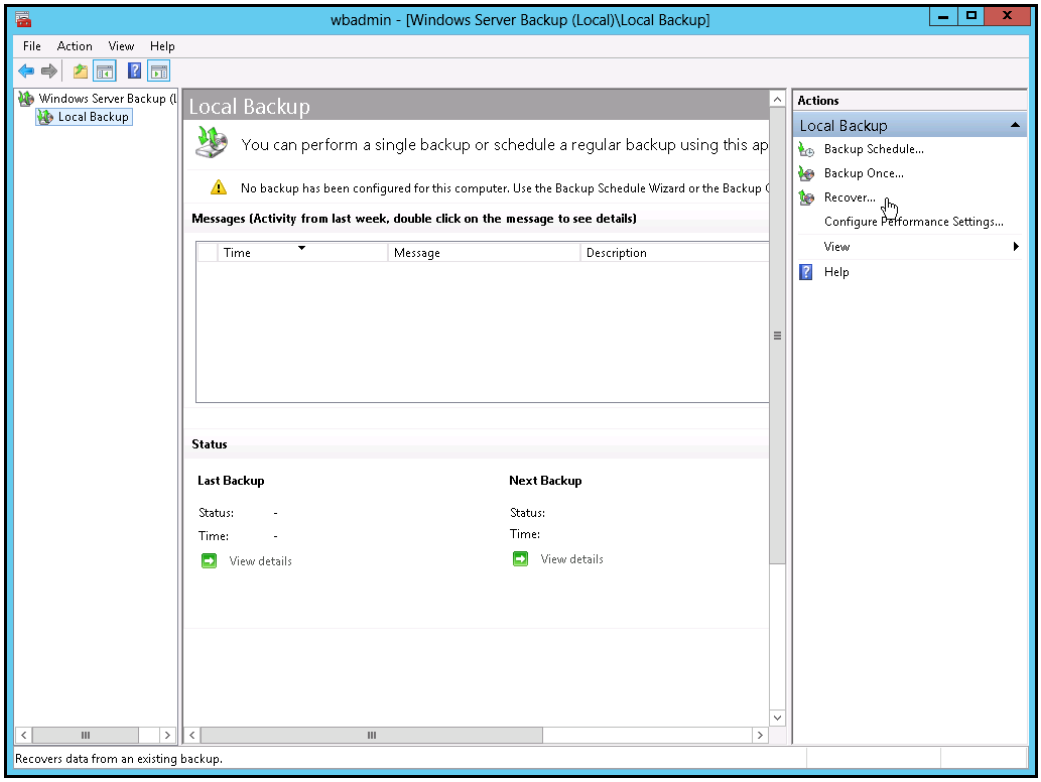
6.3.2 Recover Applications and Data

To recover application and data using the Recovery Wizard in the Windows Server Backup user interface.

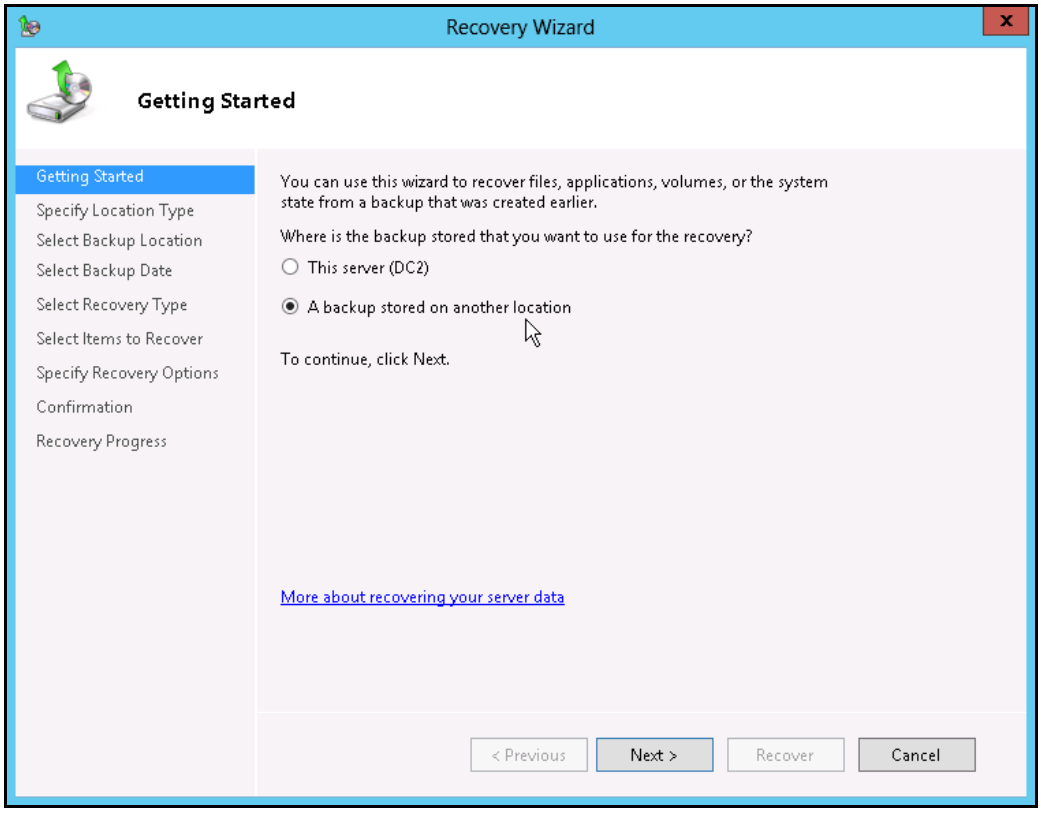
1. Open **Windows Server Backup** from Administrative Tools or Server Manager.



2. In the **Actions** panel under **Windows Server Backup**, click **Recover...**

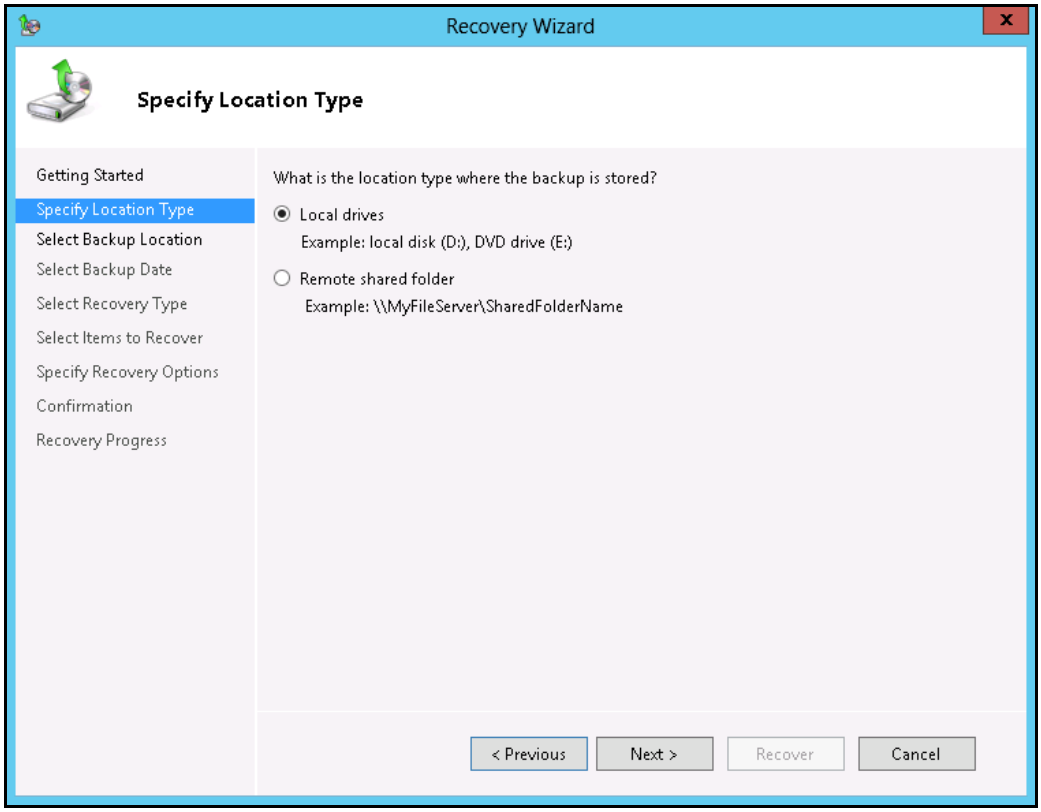


3. On the **Getting Started page**, select **A backup stored on another location**, then click **Next.**

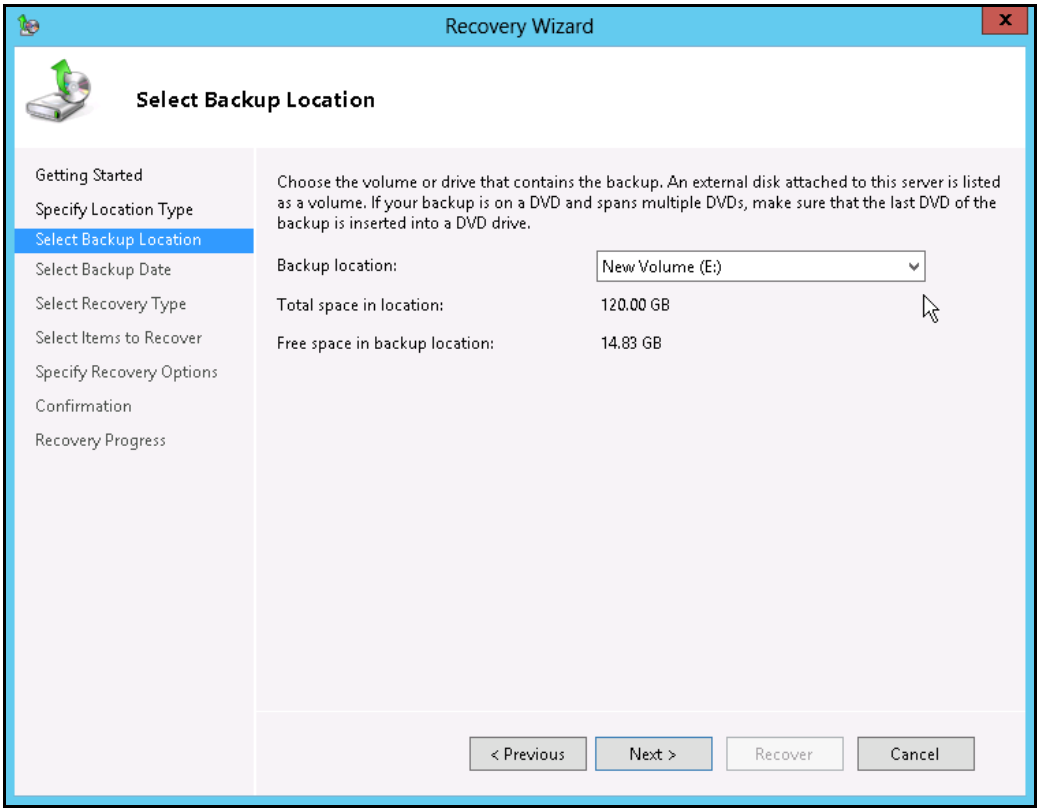


4. On the **Specify Location Type** page, select

- Click **Local drives**, if the system image was copied to a local volume on the server.
- Click **Remote shared folder**, if the system image was copied to a network path accessible to this server.



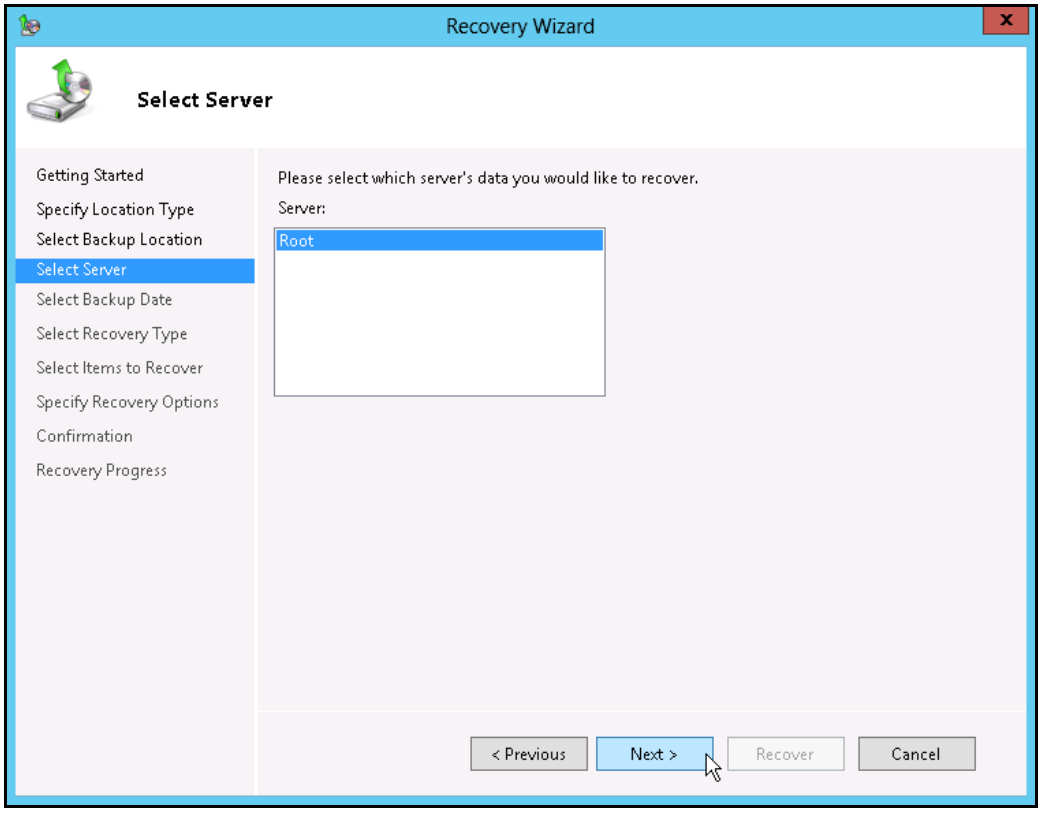
5. On the **Select Backup Location** page, select the volume that contains the system image file.



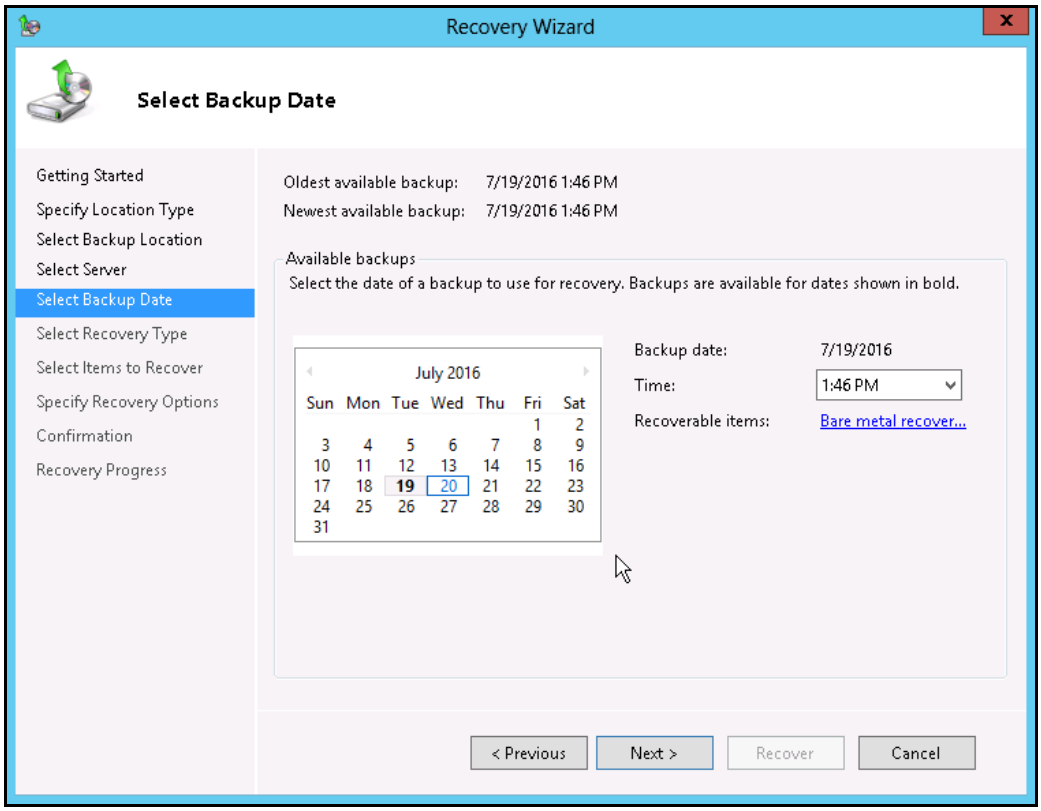
Note: *Assuming that the* ***WindowsImageBackup*** *folder was copied to the following*

E: ***WindowsImageBackup***

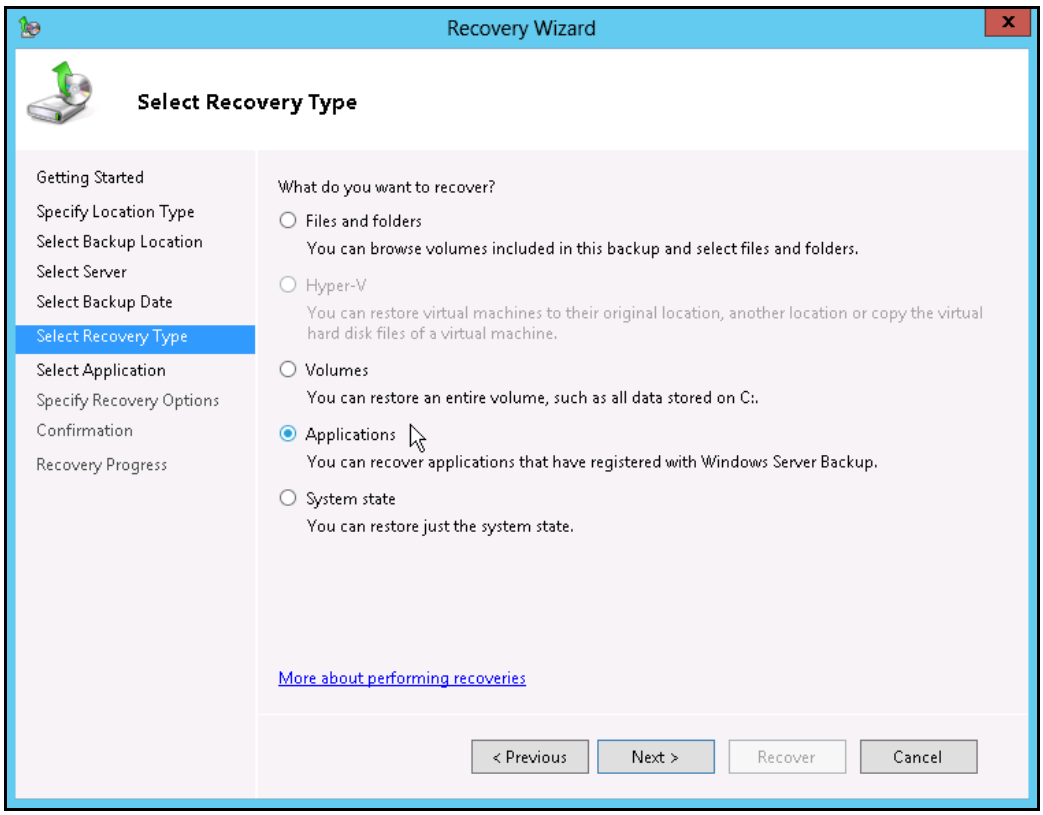
6. On the **Select Server** page, select the server whose data you want to recover.



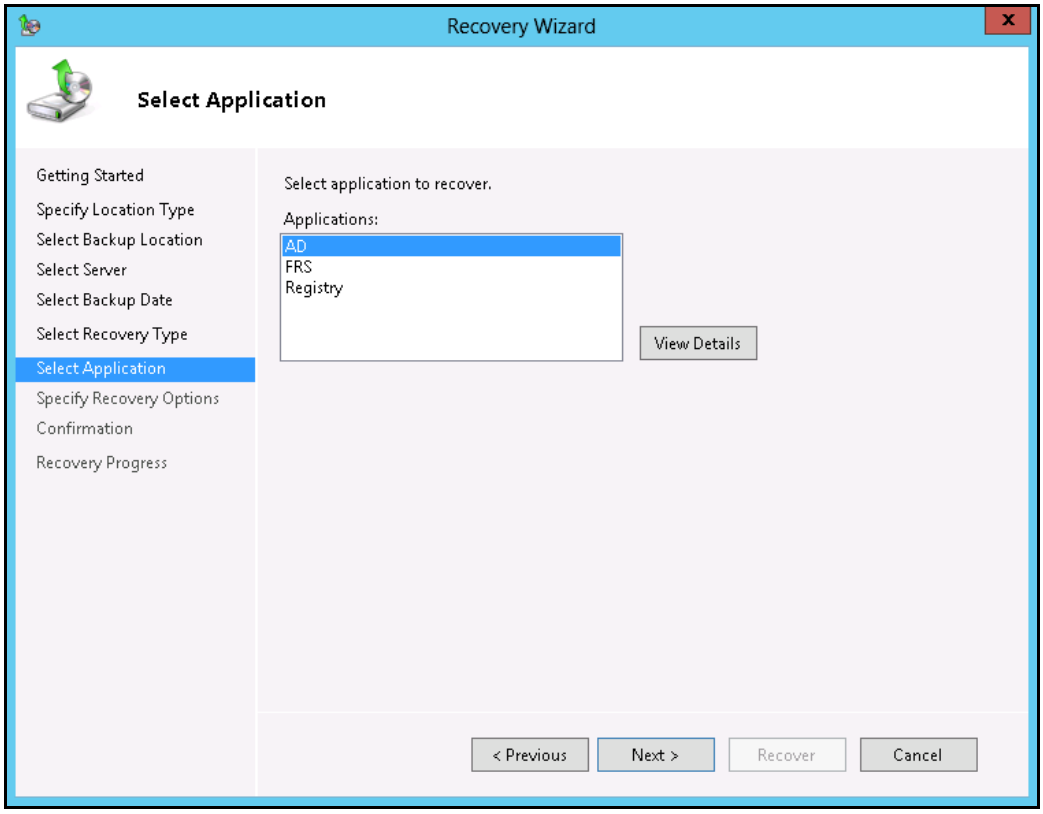
7. On the **Select Backup Date** page, select the point in time of the backup you want to restore from



8. On the **Select Recovery Type** page, click **Applications**, and then click **Next**.



9. On the **Select Application** page, under **Applications**, click the application that you want to recover.

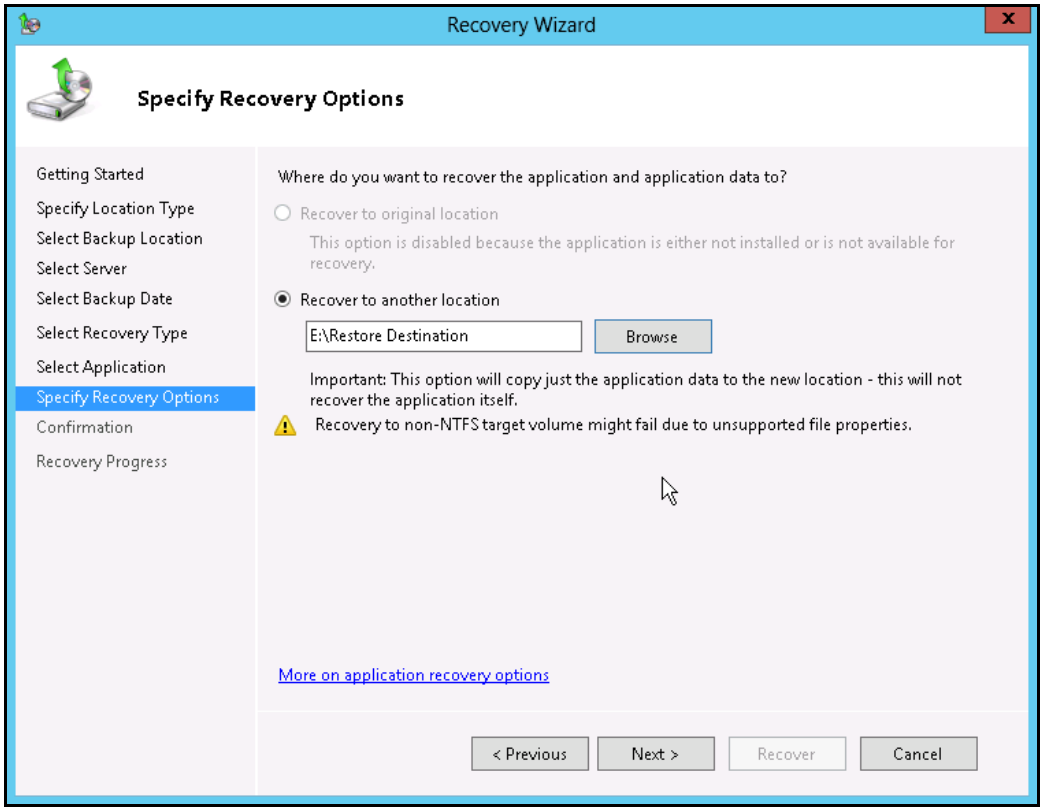


Note: *If the backup that you are using is the most recent and the application you are recovering supports a "roll-forward" of the application database, you will see a check box labeled* ***Do not perform a roll-forward recovery of the application databases****.*

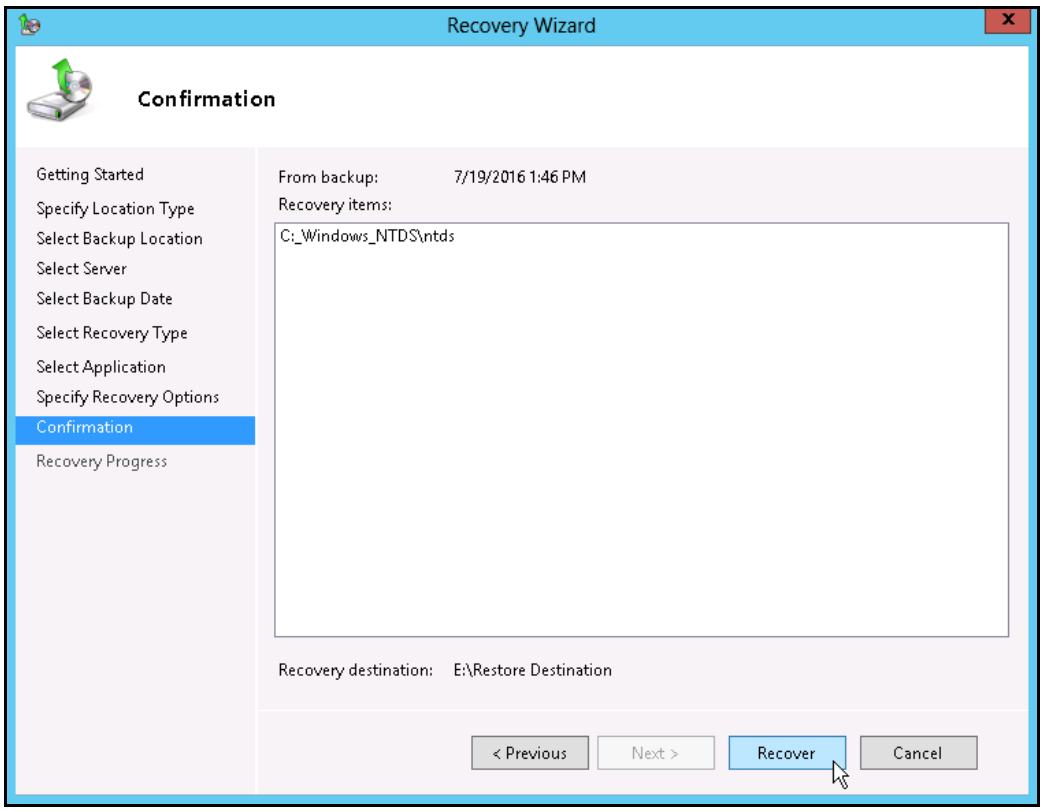
Select this check box if you want to prevent Windows Server Backup from rolling forward the application database that is currently on your server.

10. On the **Specify Recovery Options** page, select **Recover to another location**.

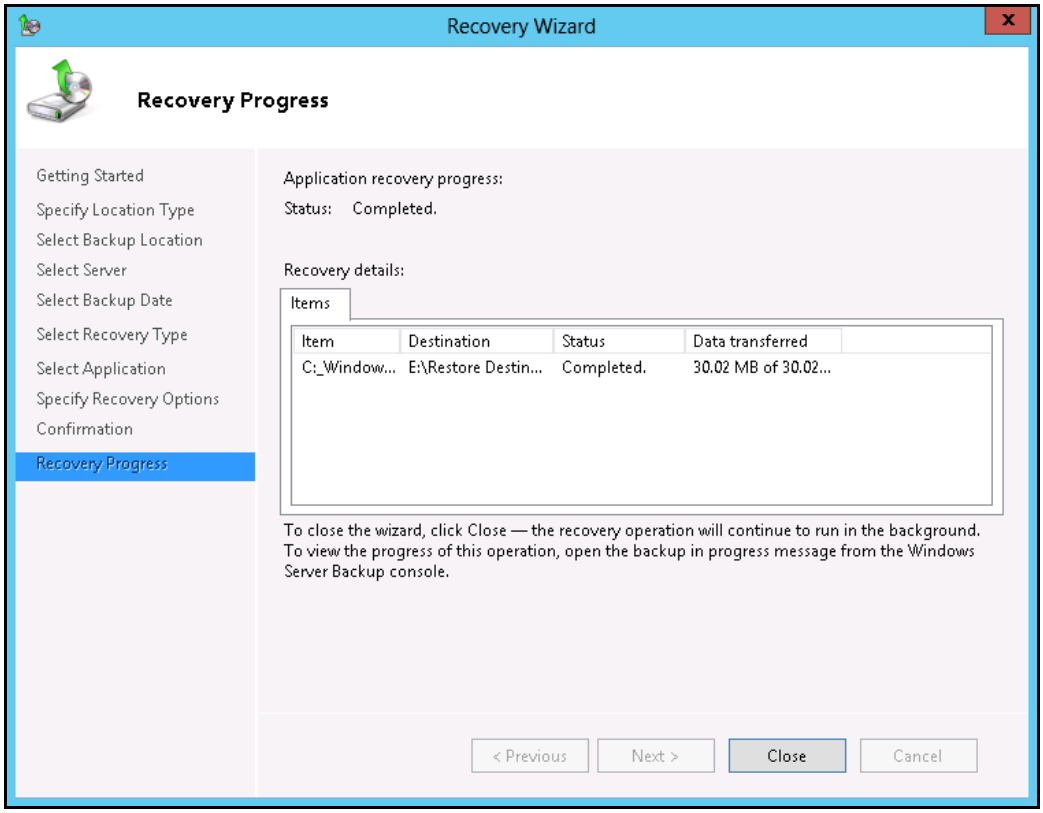
    Type the path to the location, or click **Browse** to select it.



11. On the **Confirmation** page, review the details, and then click **Recover** to restore the listed items.



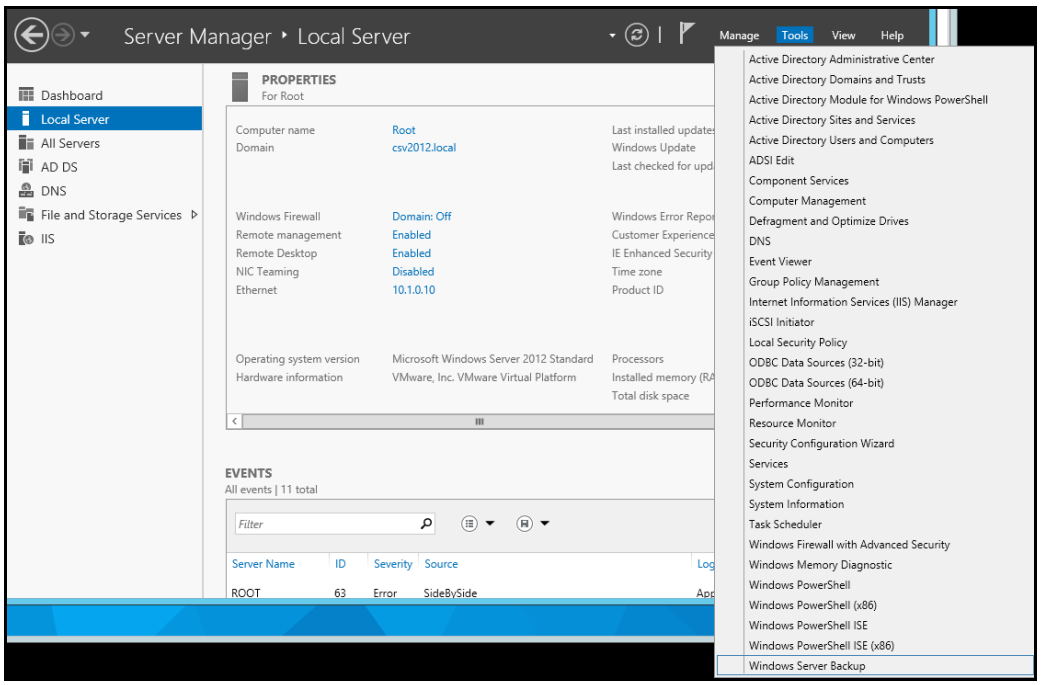
12. On the **Recovery progress** page, the status and result of the recovery operation is displayed.



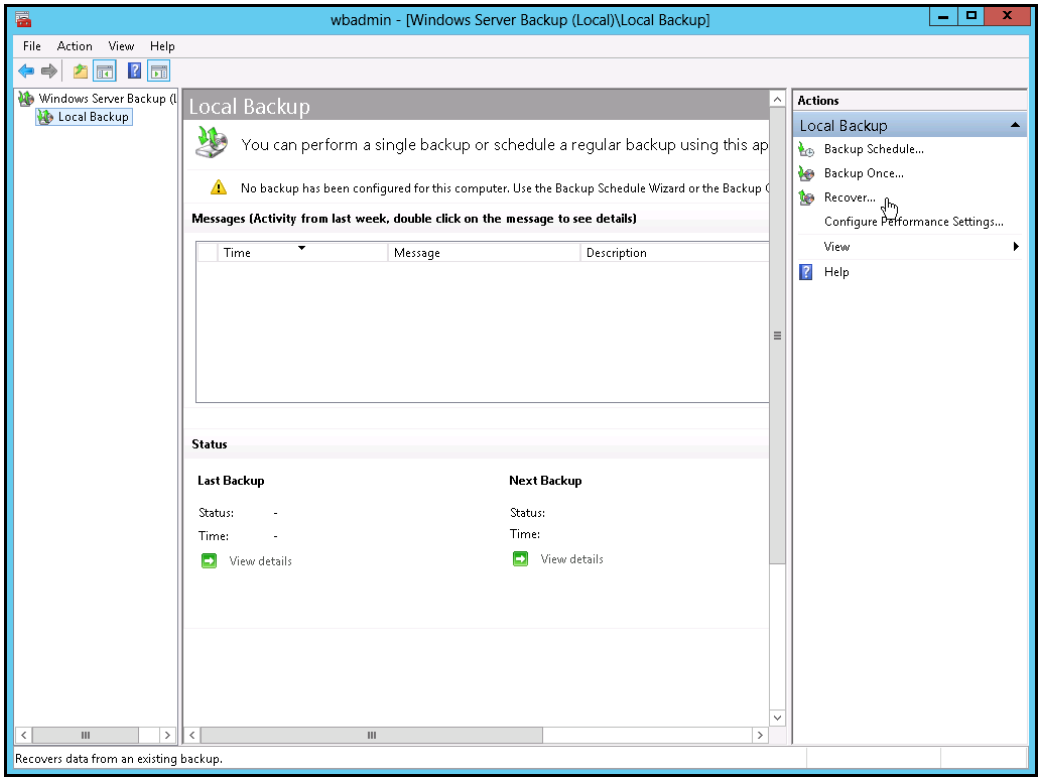
6.3.3 Recover Volumes

To recover volume using the Recovery Wizard in the Windows Server Backup user interface.

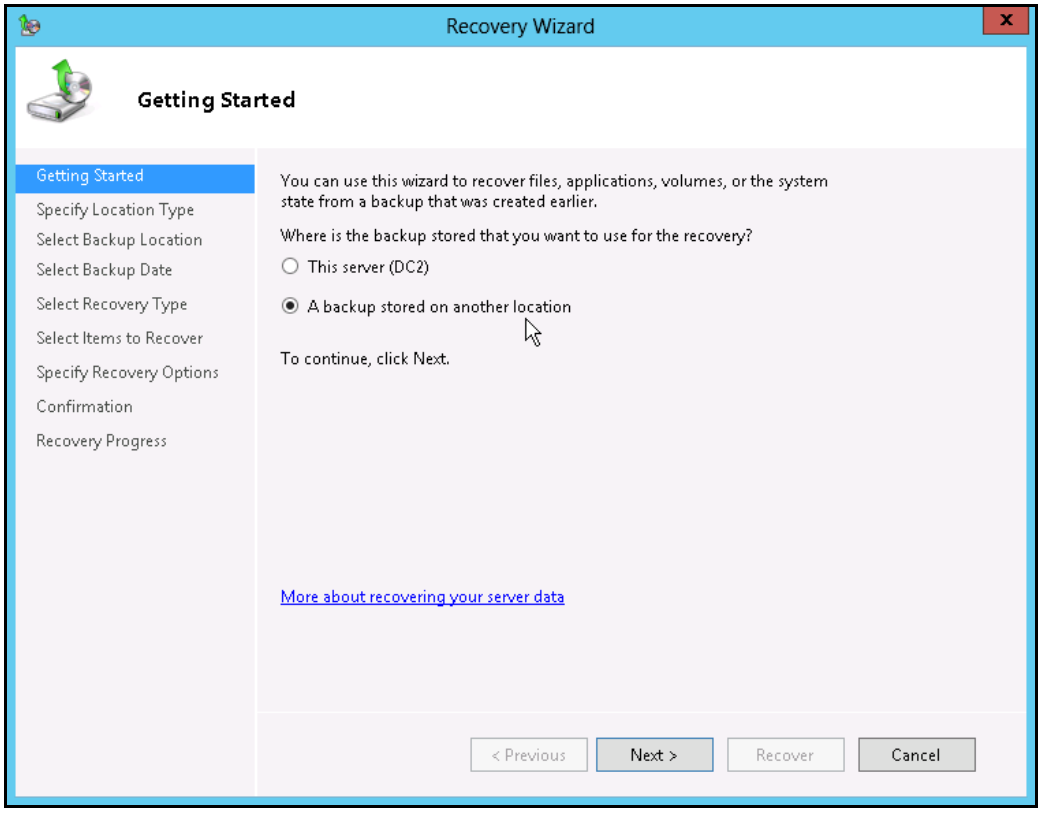
1. Open Windows Server Backup from Administrative Tools or Server Manager.



2. In the **Actions** panel under Windows Server Backup, click **Recover**.

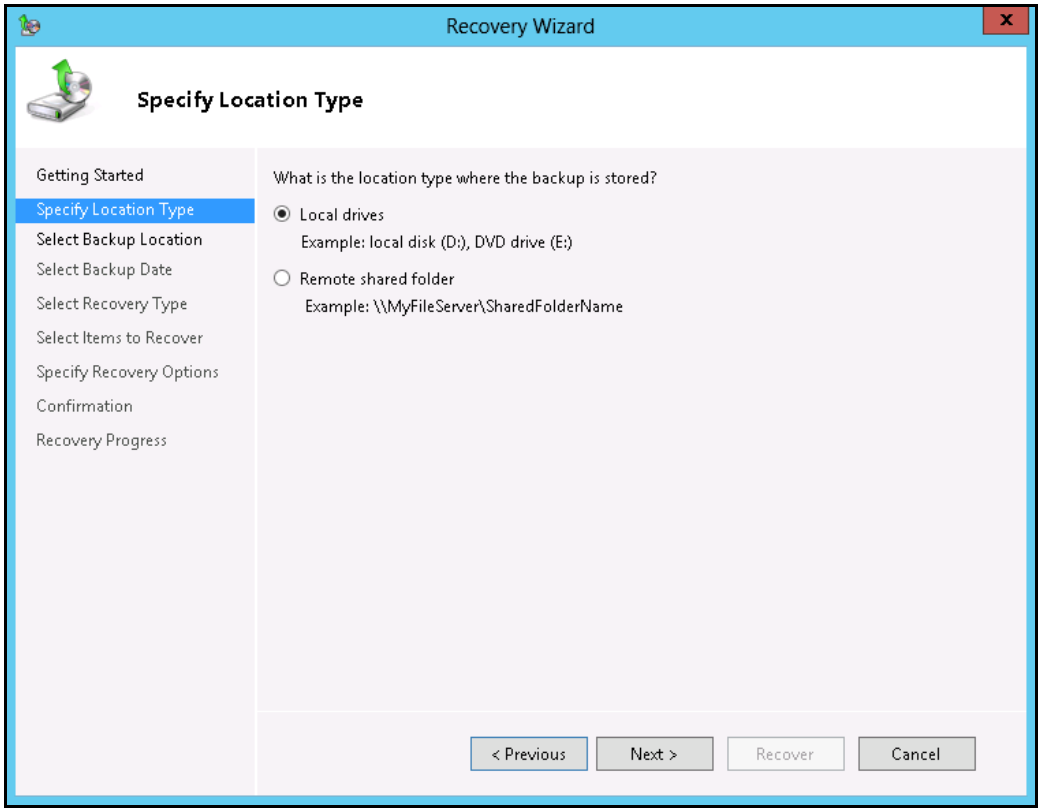


3. On the **Getting Started page**, select **A backup stored on another location**, then click **Next.**

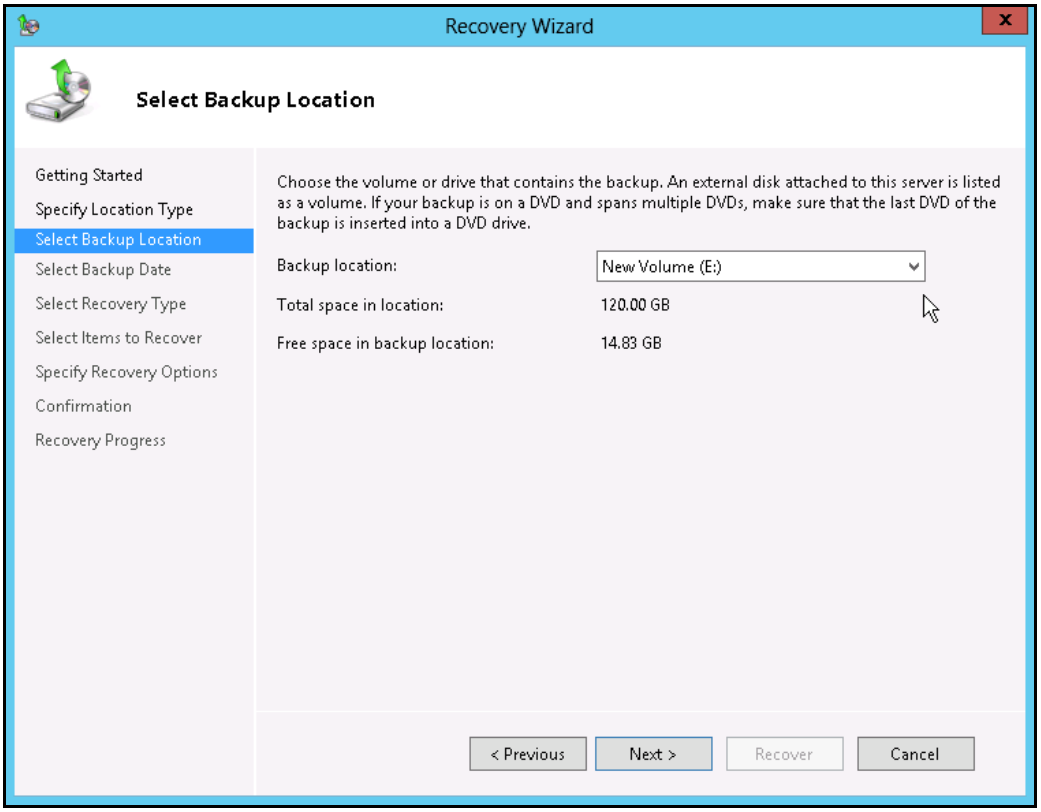


4. On the **Specify Location Type** page, select

- Click **Local drives**, if the system image was copied to a local volume on the server.
- Click **Remote shared folder**, if the system image was copied to a network path accessible to this server.



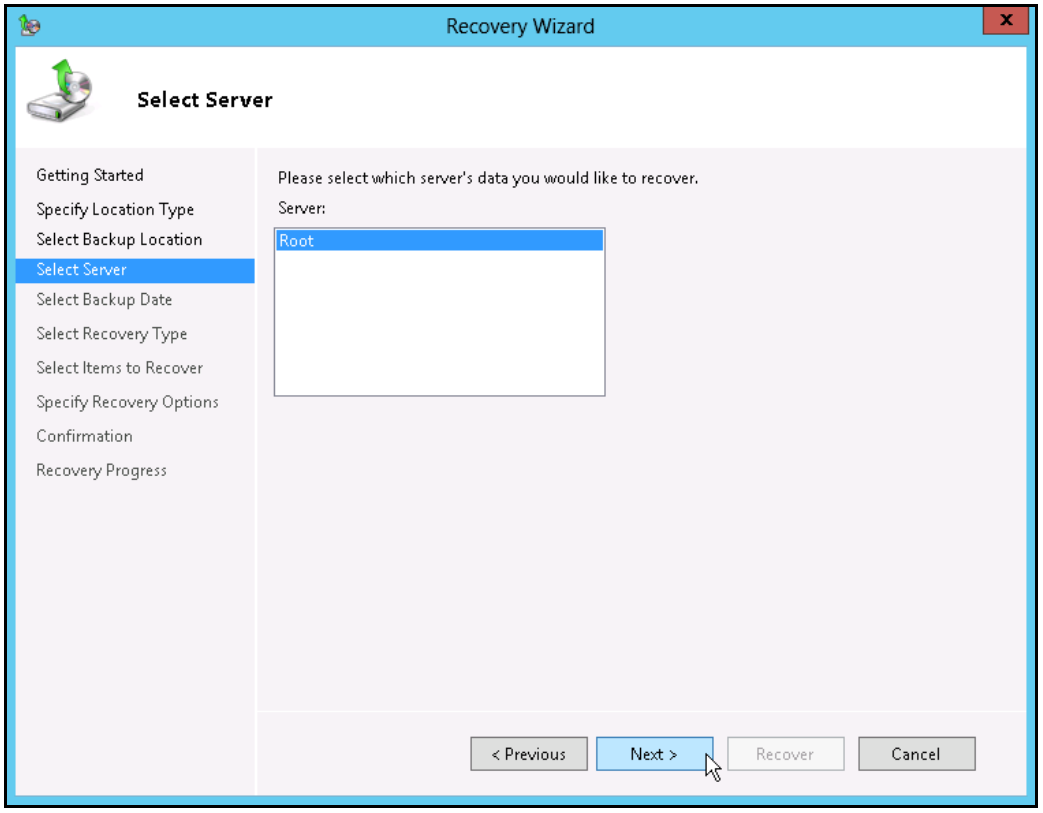
5. On the **Select Backup Location** page, select the volume that contains the system image file.



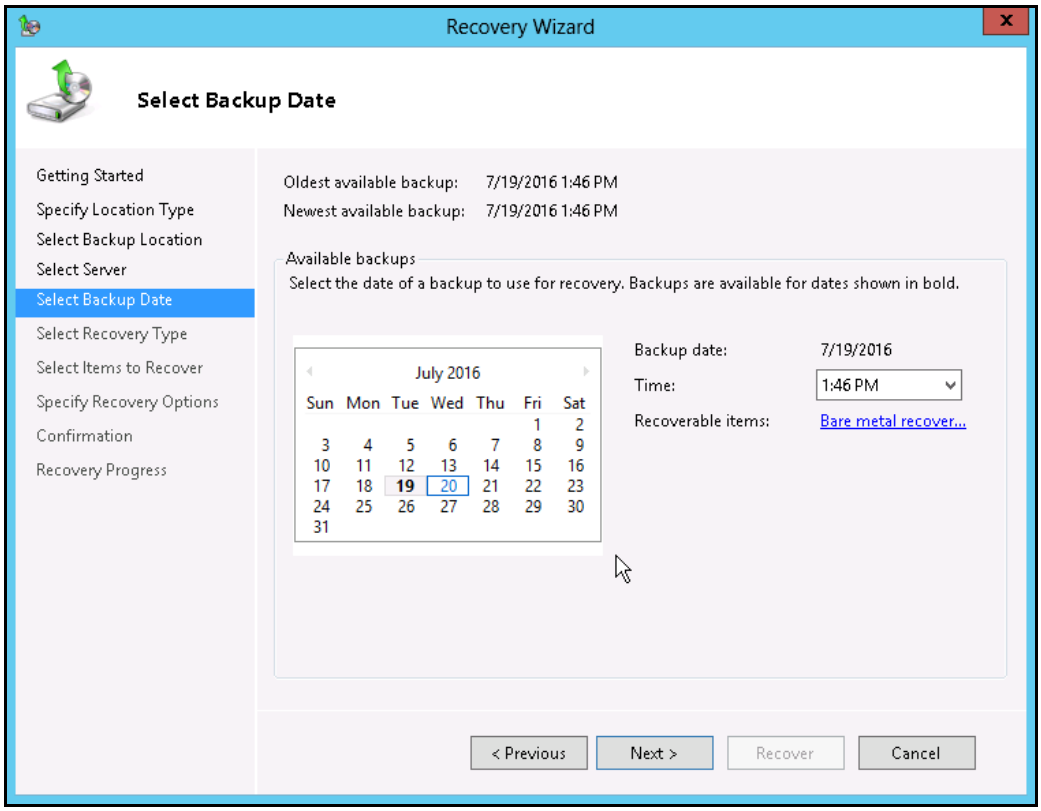
Note: *Assuming that the* ***WindowsImageBackup*** *folder was copied to the following*

E: ***WindowsImageBackup***

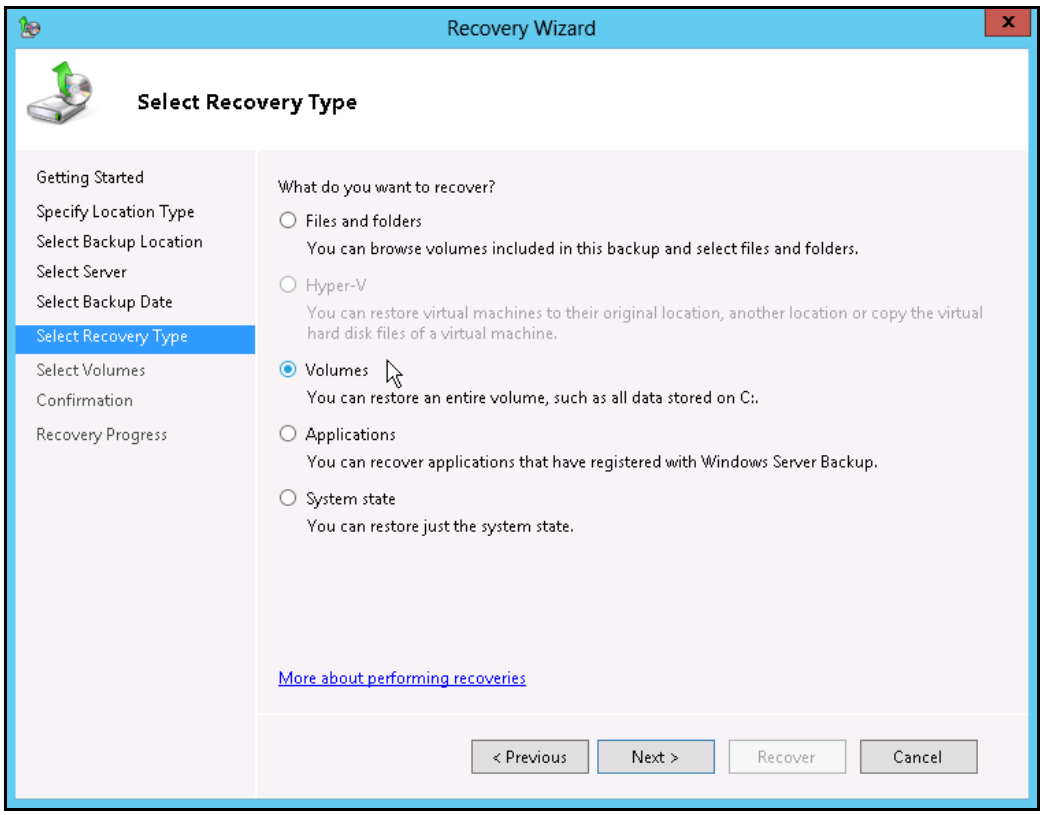
6. On the **Select Server** page, select the server whose data you want to recover.



7. On the **Select Backup Date** page, select the point in time of the backup you want to restore from

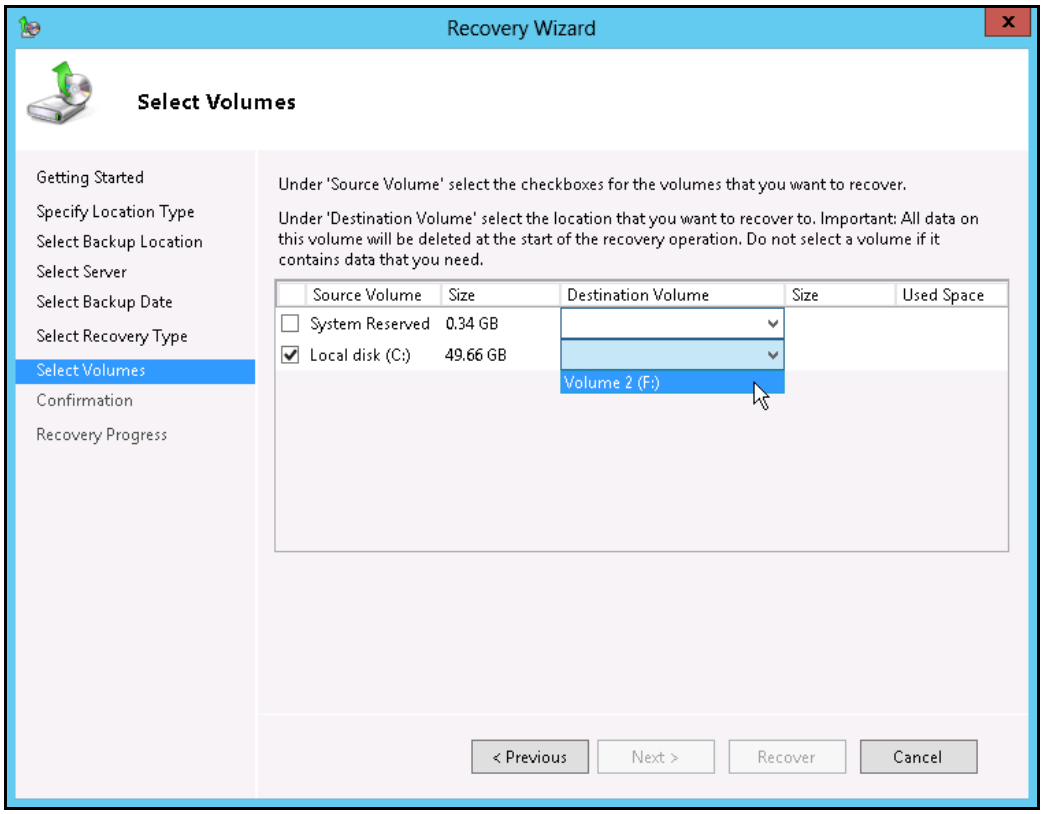


8. On the **Select Recovery Type** page, click **Volumes**, and then click **Next**.

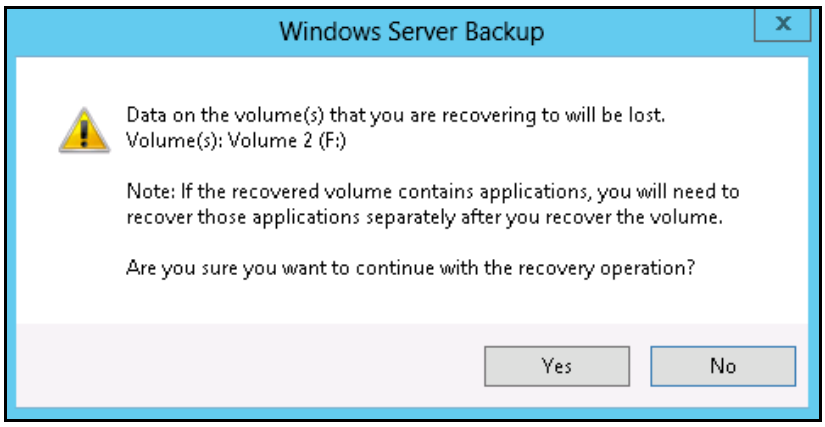


9. On the **Select Volumes** page, select the check boxes associated with the volumes in the **Source Volume** column that you want to recover.

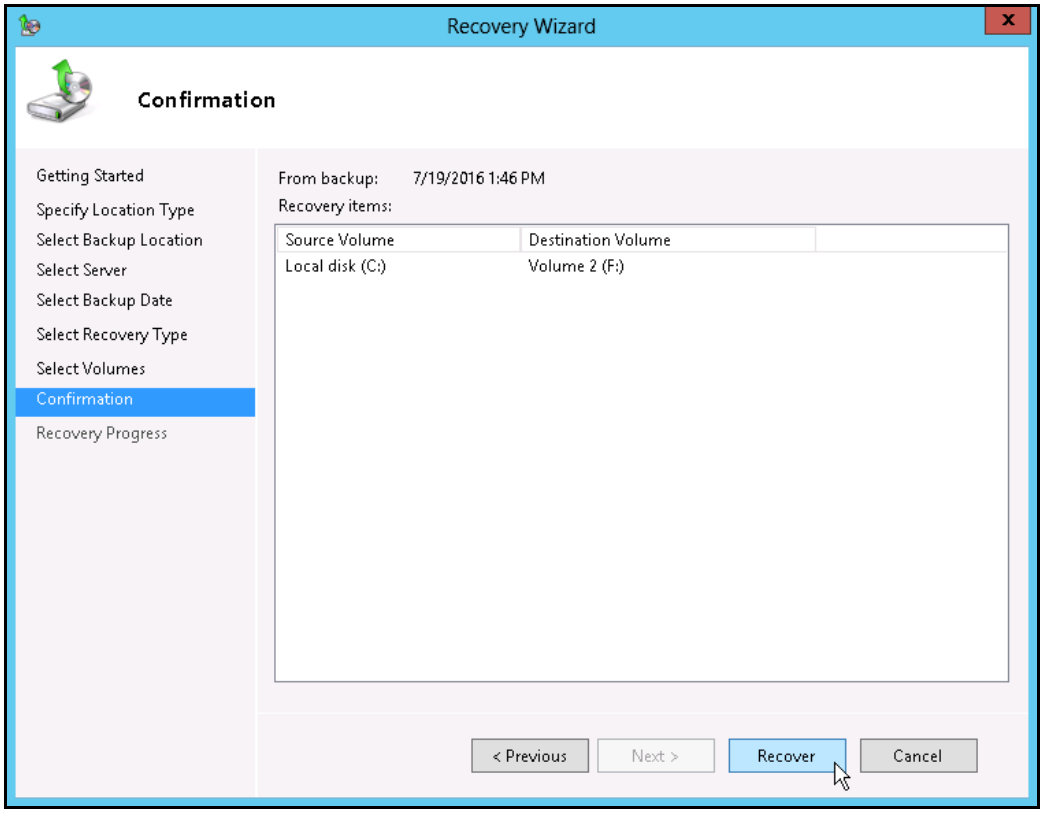
   Then, from the associated dropdown list in the **Destination Volume** column, select the location that you want to recover the volume to.



Important: Before clicking **Next** to continue, make sure that the destination volume is empty, or does not contain information that you will need later.



10. On the **Confirmation** page, review the details, and then click **Recover** to restore the volume.



11. On the **Recovery progress** page, the status and result of the recovery operation is displayed.

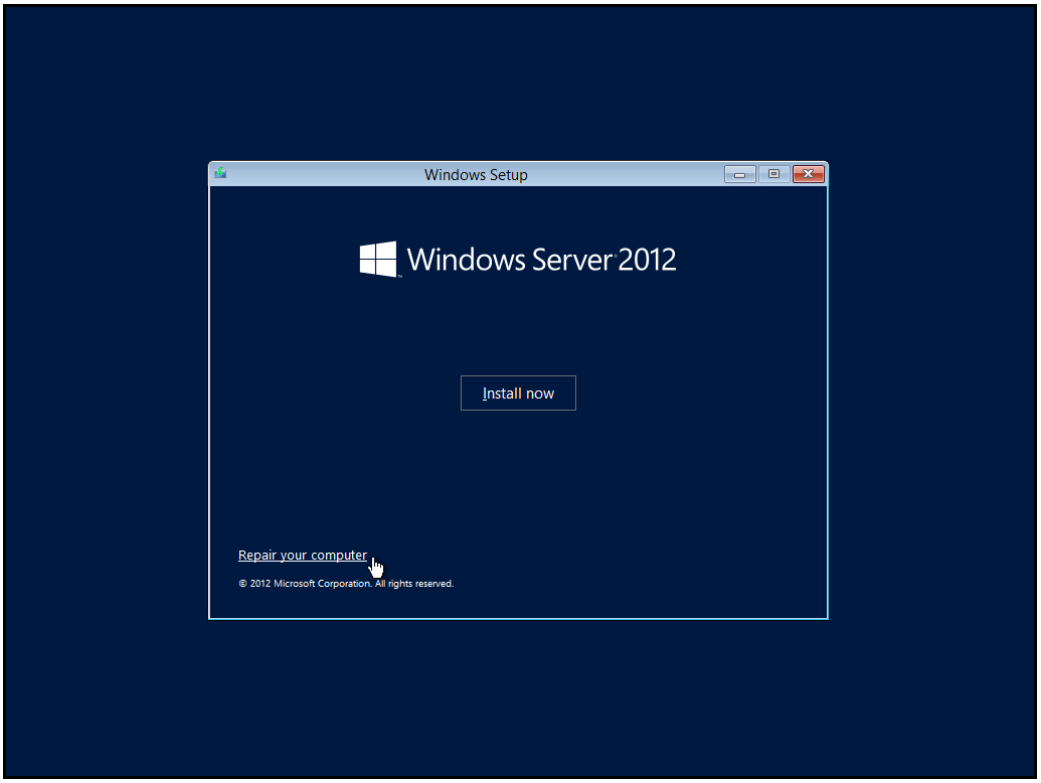
6.3.4 Recover Operating System or Full System

You can recover an operating system or full system by using Windows Recovery Environment, or by booting from a Windows setup disc.

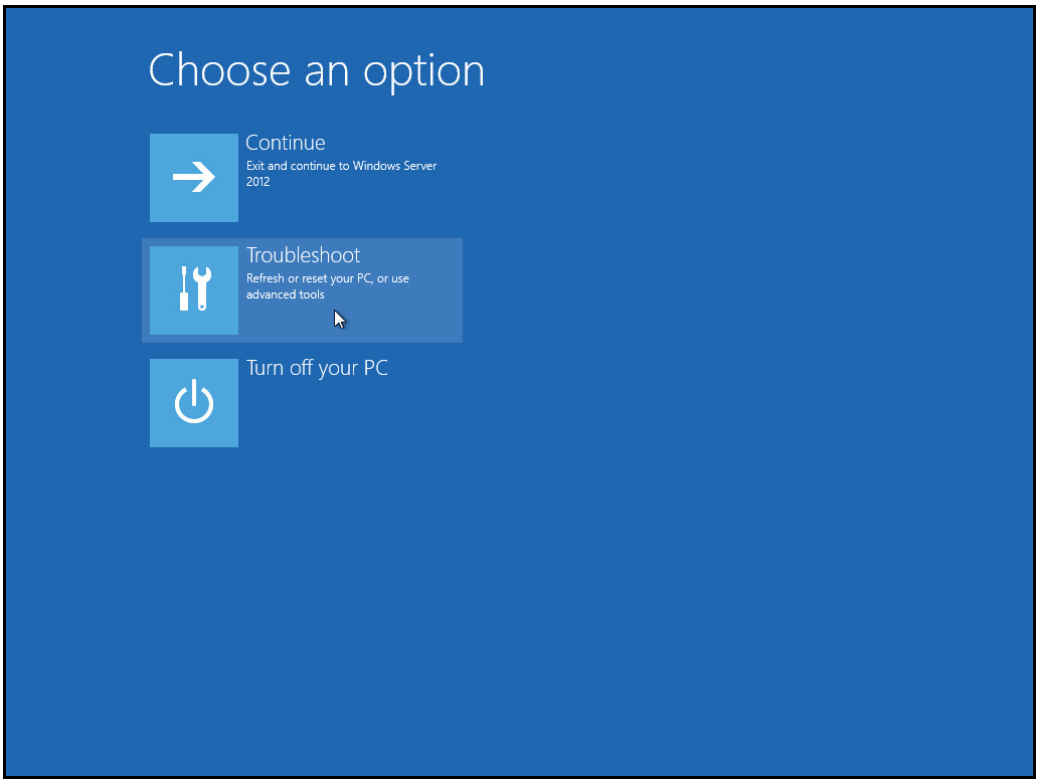
Note: *For instructions specific to recovering Active Directory Domain Services, refer to the following:* [*http://go.microsoft.com/fwlink/?LinkId=143754*](http://go.microsoft.com/fwlink/?LinkId=143754)

To launch in Windows Recovery Environment, insert the Windows setup disc that has the same architecture of the system that you are recovering, into the CD / DVD drive and start or restart the computer. Press the required key to boot from the disc.

1. On the Windows Setup page, select Repair your computer.

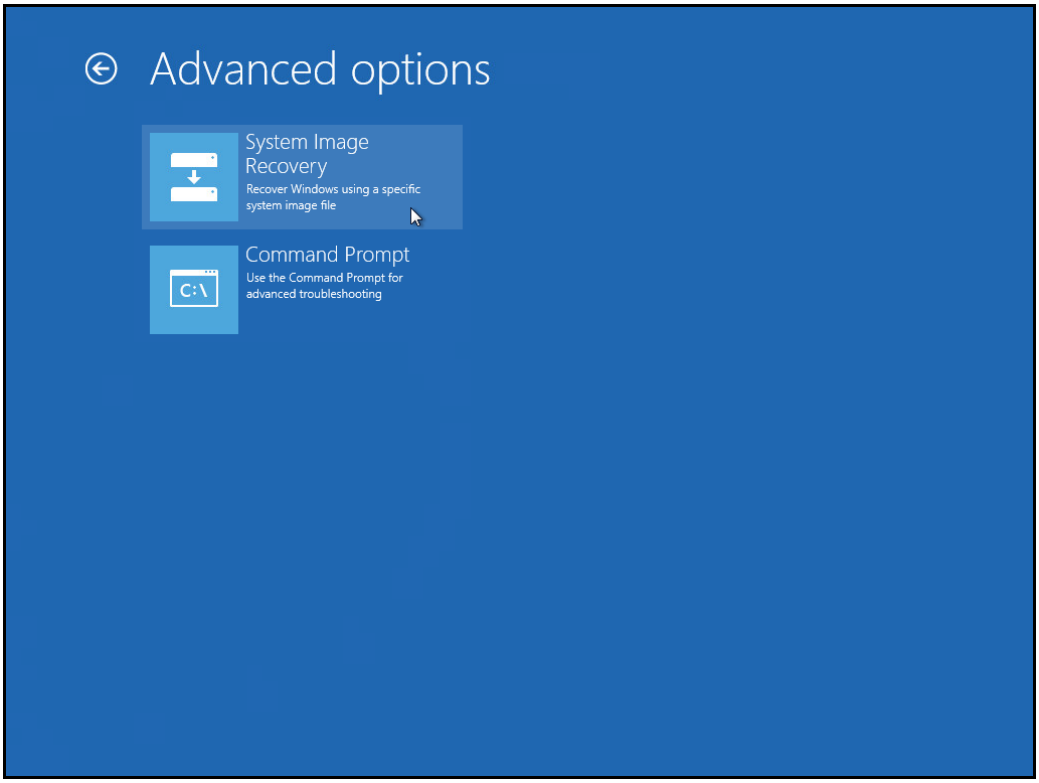


2. On the **Choose an option** page, click **Troubleshoot**.



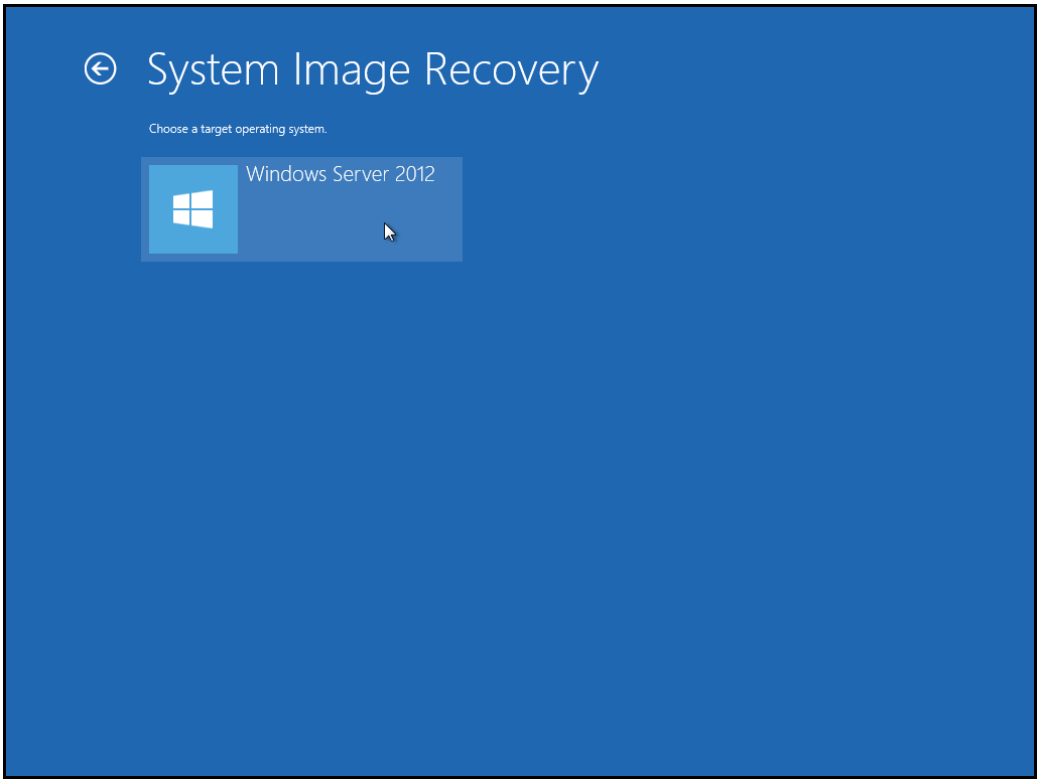
Note: *This screen will only be displayed when you are recovering a Windows 2012 / 2012 R2 Server.*

3. Click **System Image Recovery**.



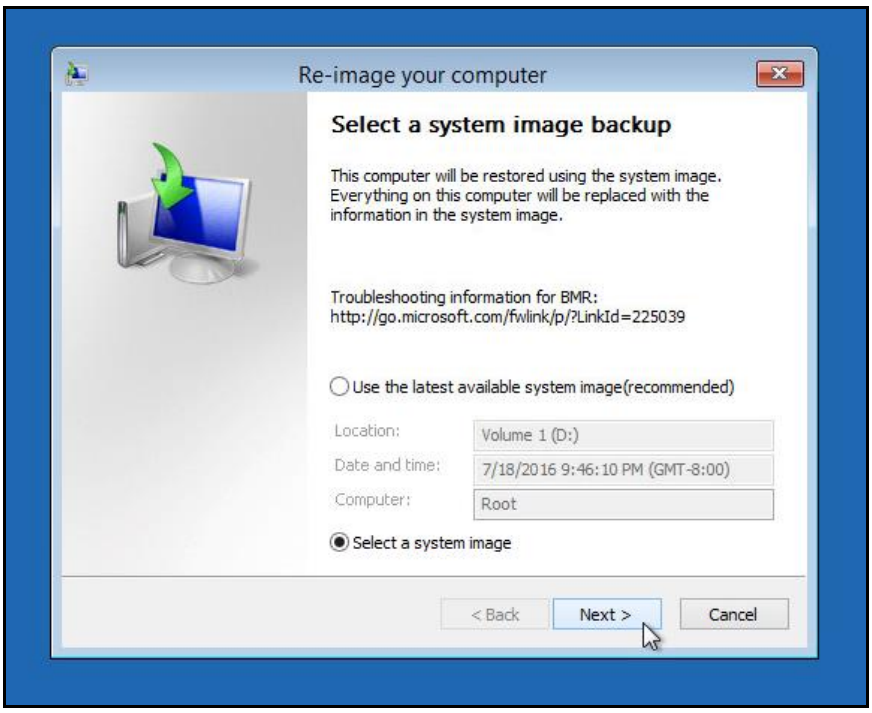
Note: *This screen will only be displayed when you are recovering a Windows 2012 / 2012 R2 Server.*

4. Confirm on the target operating system. This opens the **Re-image your computer** page

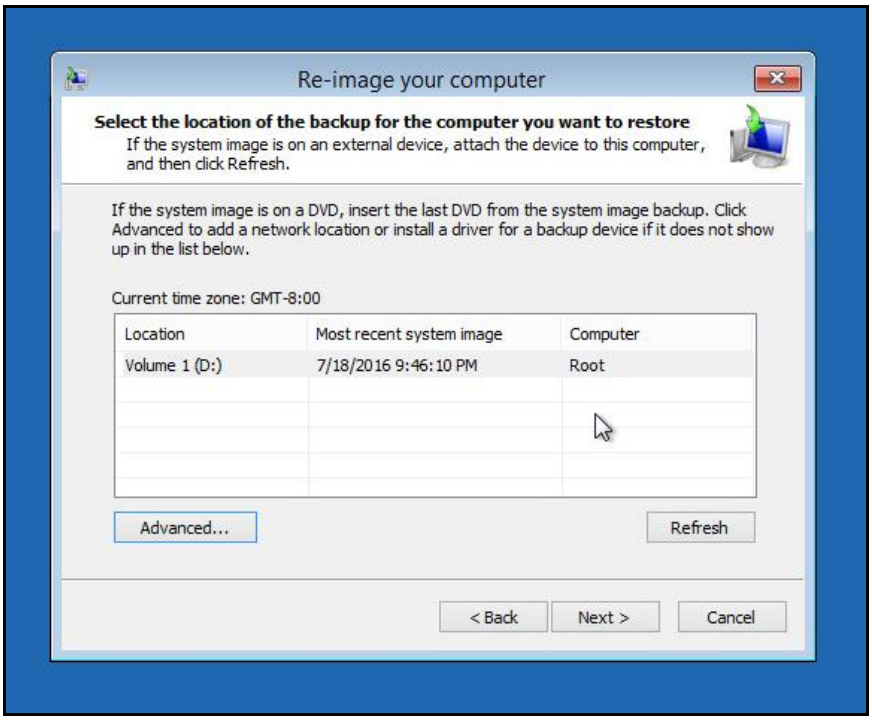


Note: *This screen will only be displayed when you are recovering a Windows 2012 / 2012 R2 Server.*

5. Click **Select a system image**, then click **Next**.



6. Select the location that contains the system image to restore from. If you do not see the image available, then



- Click **Advanced**, and install the required driver for the removable drive to be accessed, if the system image was copied to a removable drive attached to the server.

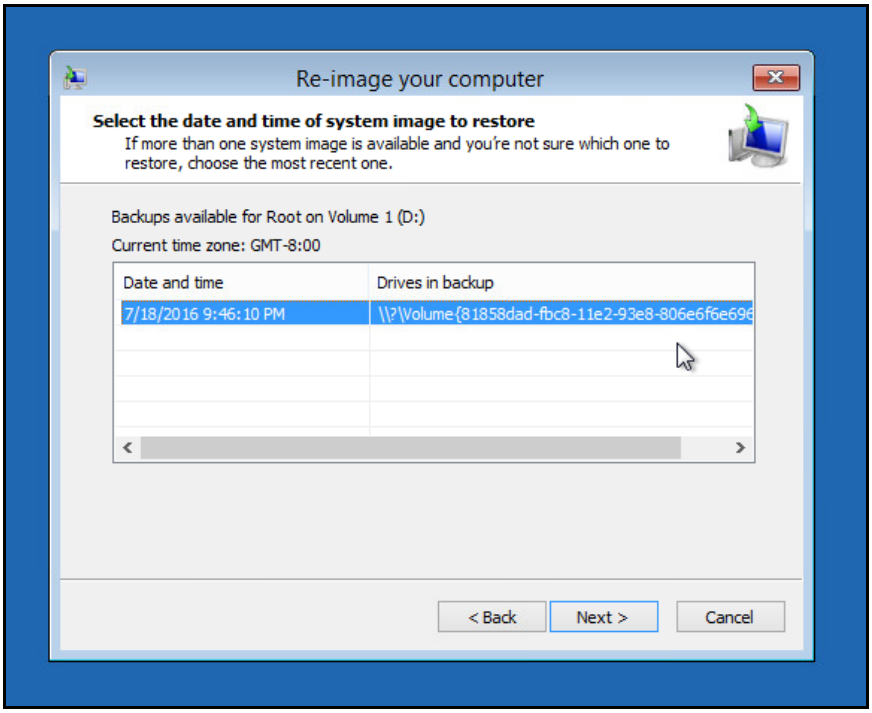
To install a driver, the driver must be located on the local system. You cannot install a driver from the network.

- Click **Advanced**, and browse to the remote shared folder which contains the system image, if the system image was copied to a network path.

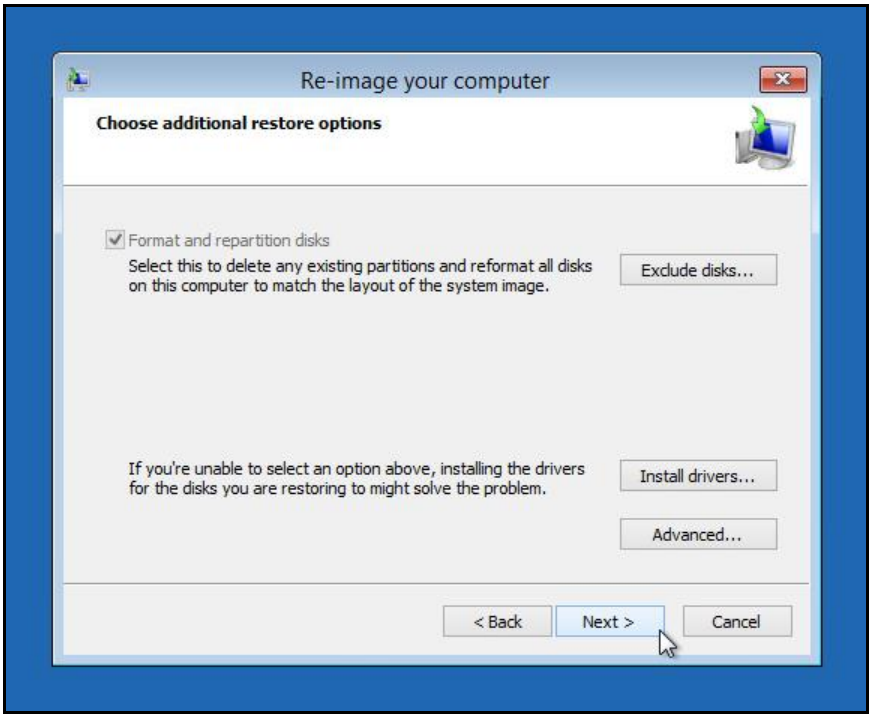
  For domain environment, if the backup storage location is on a computer that is a member of that domain, then the computer containing the storage location should be on the IPsec boundary, to be accessible by non domain computer.

  When a computer boots into Windows Recovery Environment, it becomes a non domain computer, therefore, cannot access the usual network shares. Only those computers that allow non domain computers to access the share can be used as a backup storage location in this way.

7. Select the system image to restore.

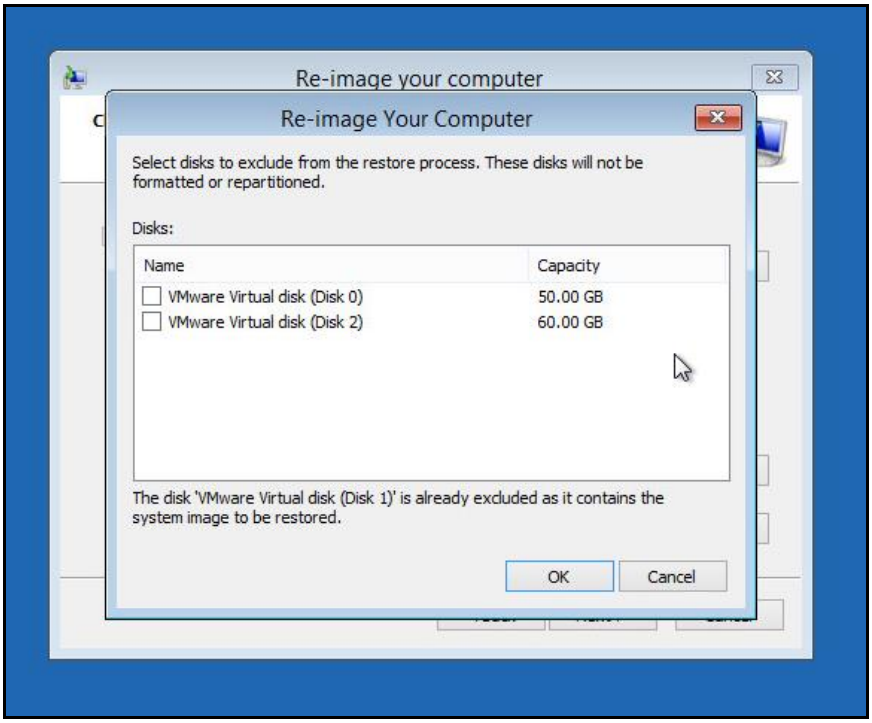


8. On the **Choose additional restore options** page



Select the **Format and repartition disks** check box to delete existing partitions and reformat the destination disks to be the same as the backup.

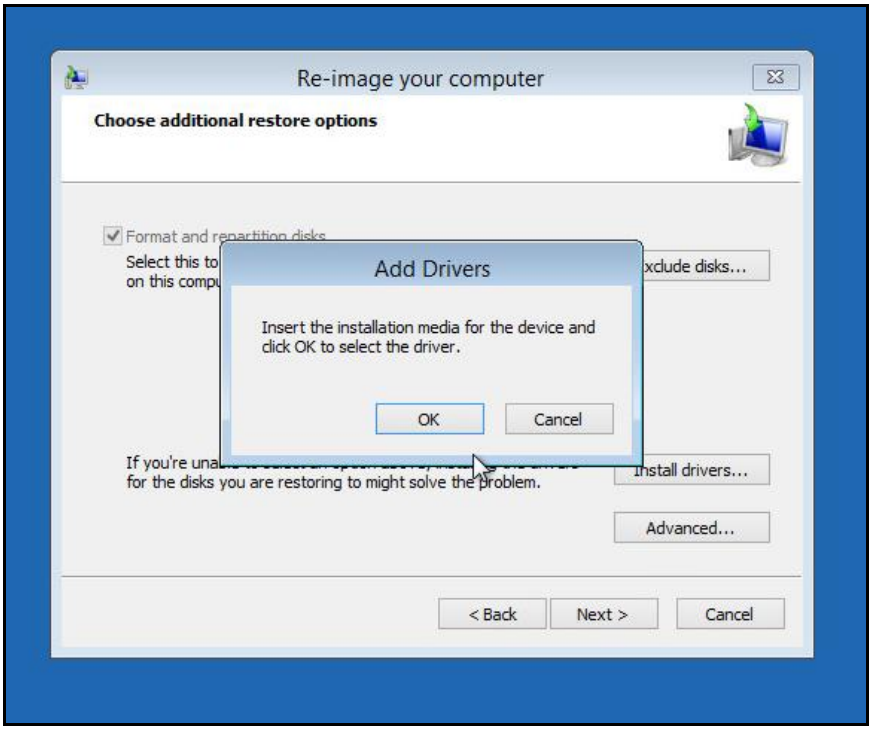
Click the **Exclude disks** button, then select the check boxes associated with any disks that you want to exclude from being formatted and partitioned.



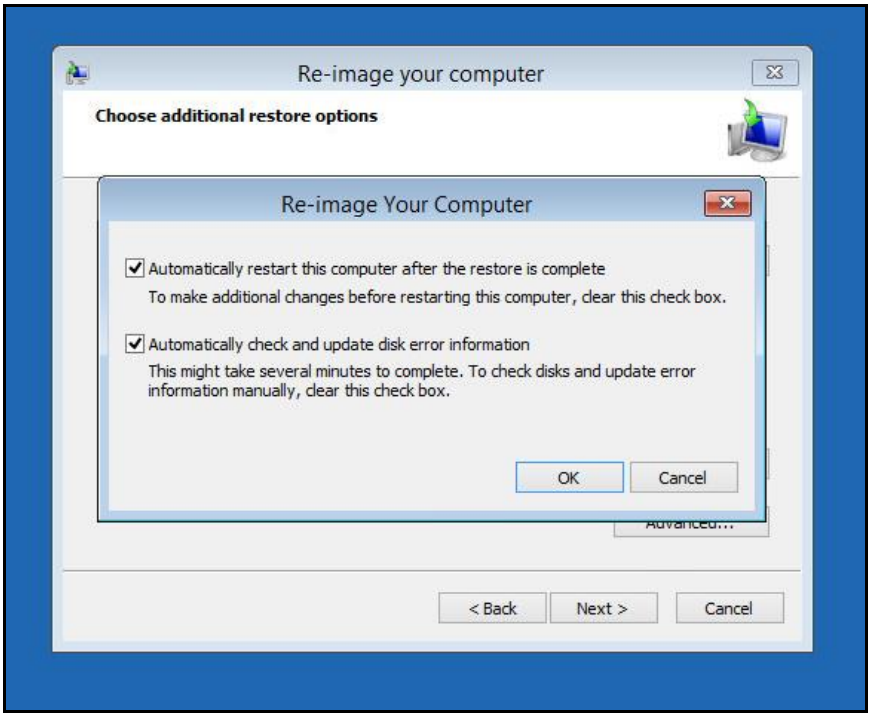
Note: *The disk that contains the backup that you are using is automatically excluded.*

Select the **Only restore system drives** check box (not displayed in screenshot) to perform an operating system only recovery (instead of a full system recovery).

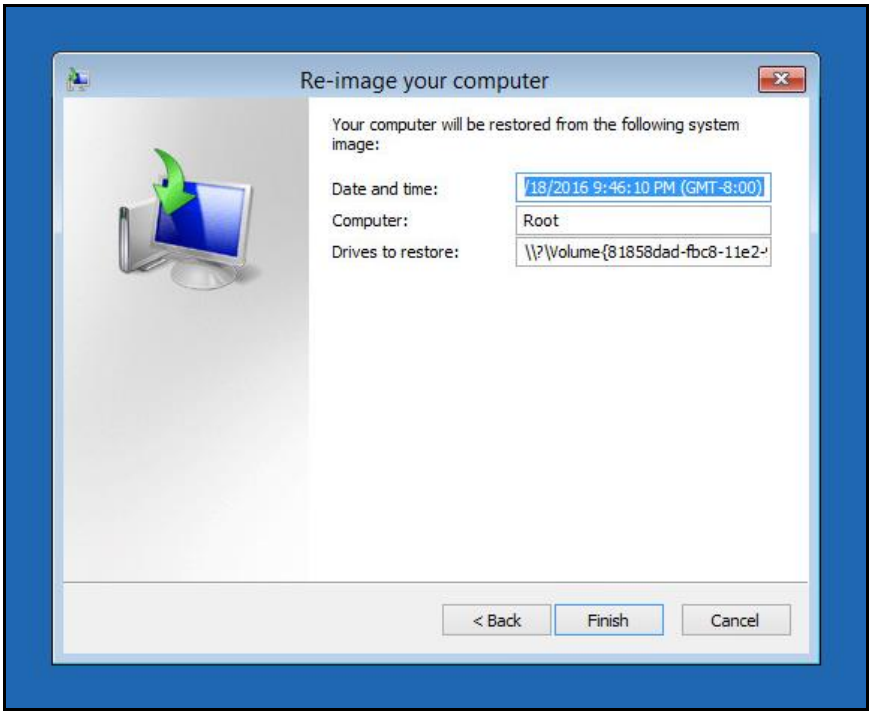
Click **Install drivers** to install device drivers for the hardware that you are recovering to.



Click **Advanced** to specify whether the computer is automatically restarted and the disks are checked for errors immediately after the recovery.



9. Confirm the details for the restoration, and then click **Finish** to start the recovery process.



The recovery will succeed as long as all the critical volumes (e.g. volumes containing operating system components) are recovered.

If any data volume cannot be recovered, Windows will show a prompt with the un-recoverable volumes at the end of the recovery operation.

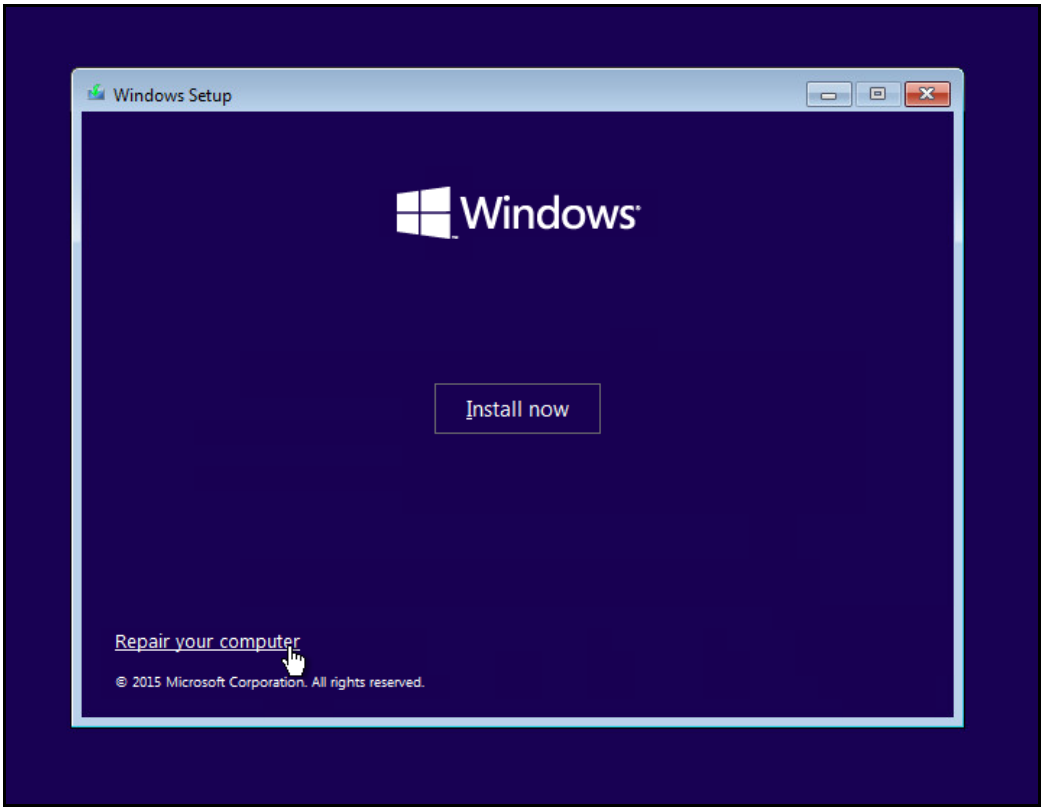
6.3.5 Recover a Full System (Non Server Platforms)

You can recover a full system using the advanced startup option by

- Booting from a Windows installation media

  Insert the installation media that has the same architecture of the system that you are recovering, and restart your computer. Press the required key to boot from the disc.

  When you see the **Windows Setup** page, click **Next**, then click **Repair your computer**.

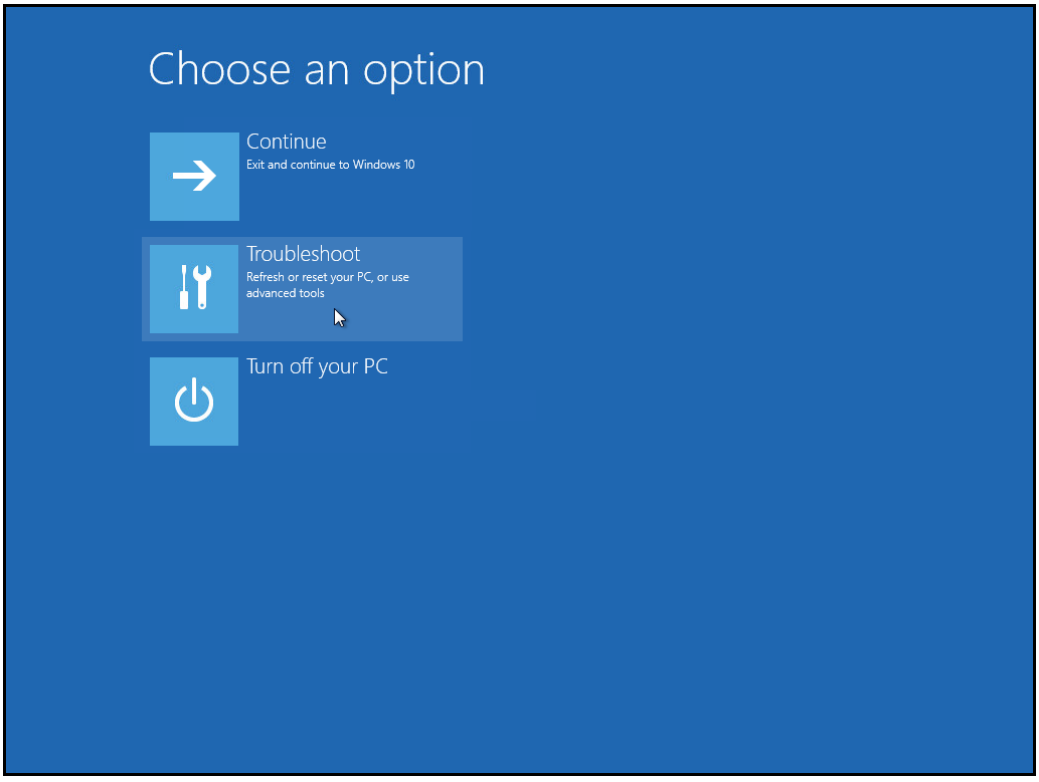


- Starting Windows in safe mode

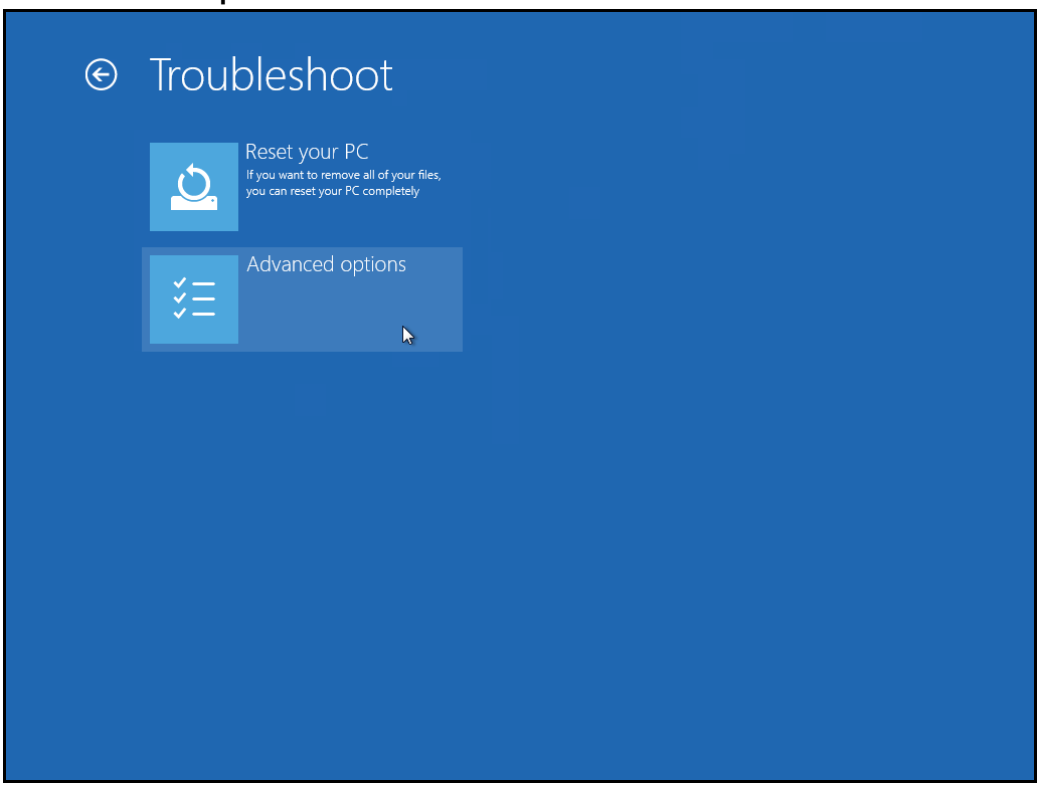
  Press the **Power** button at the Windows login screen, in the Start menu, or in the Setting screen. Then press and hold the SHIFT key on the keyboard and click **Restart**.

Once you are in the Startup Option menu, perform the following steps.

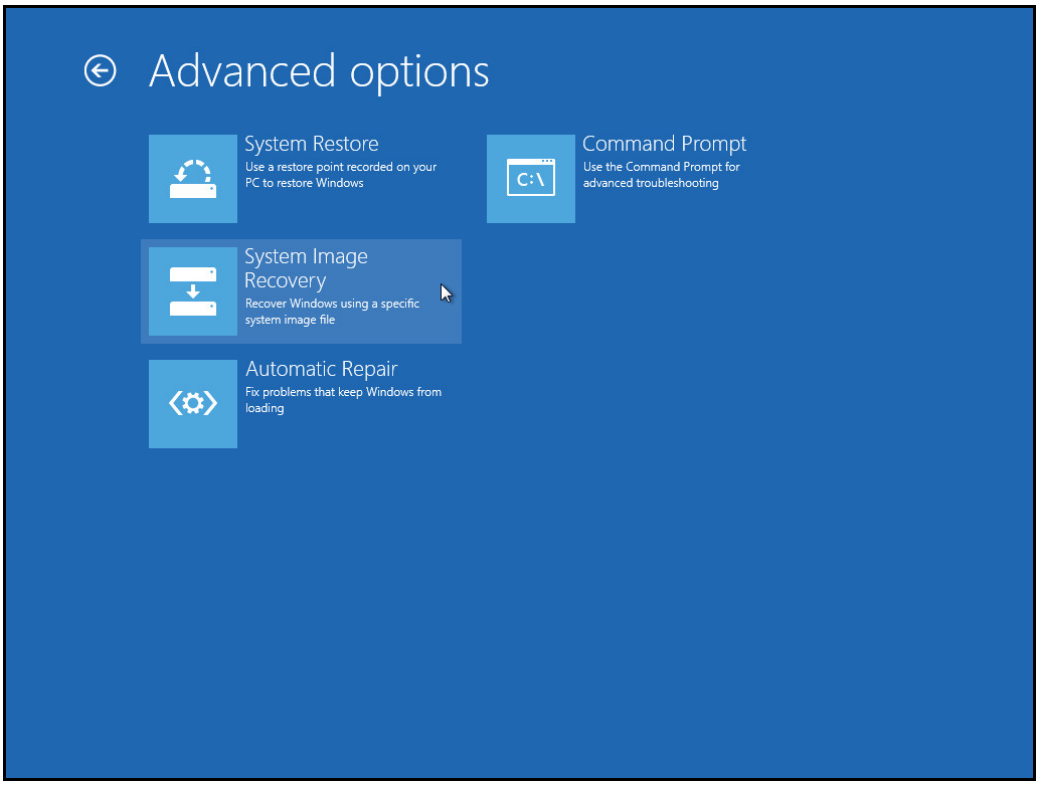
1. Click **Troubleshoot**.



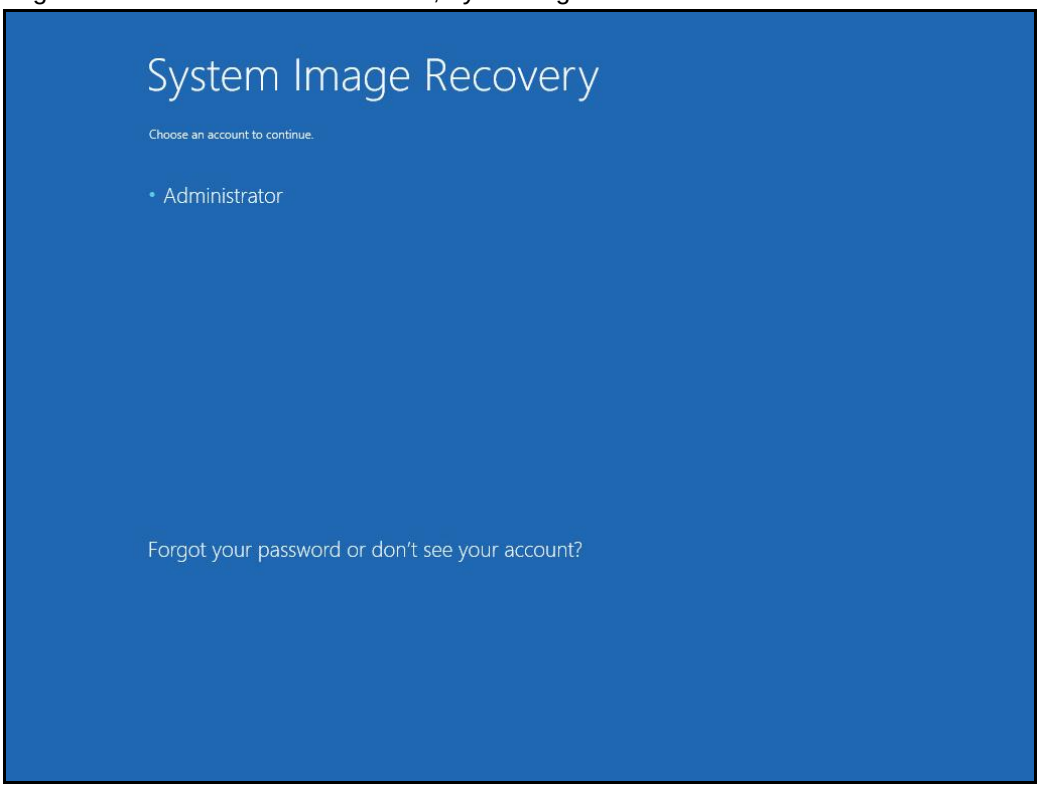
2. Click **Advanced options**.



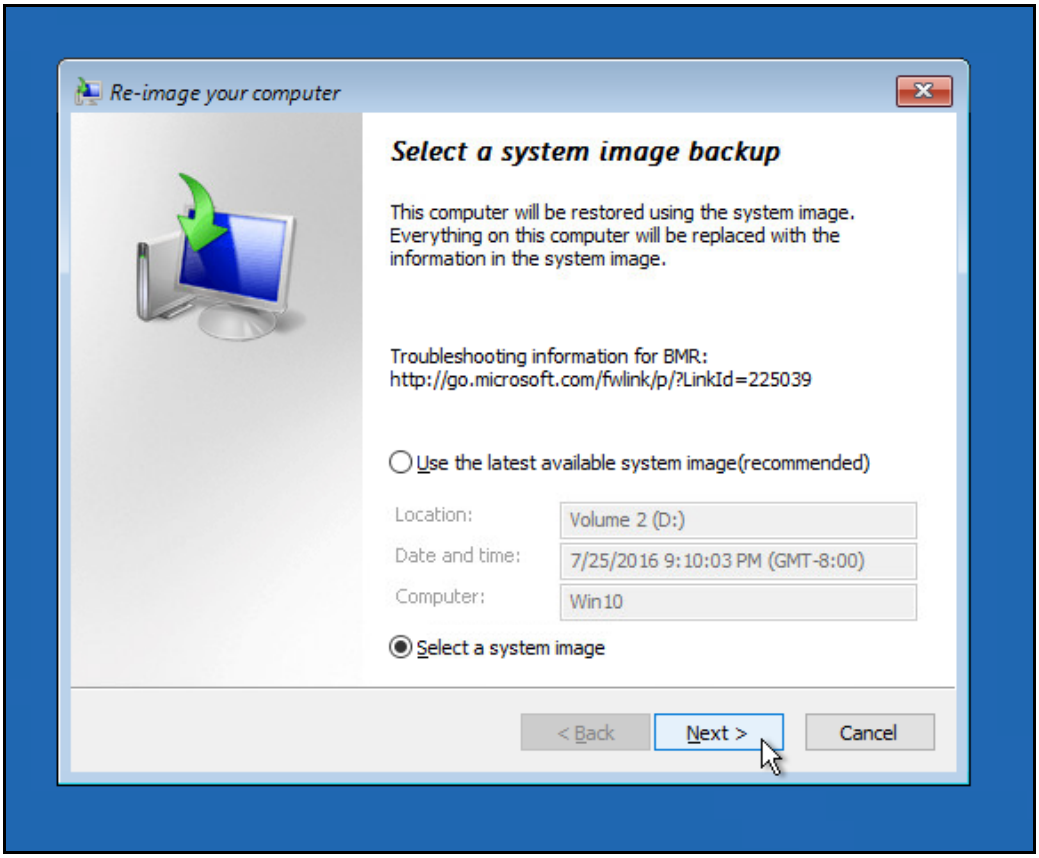
3. Click **System Image Recovery**.



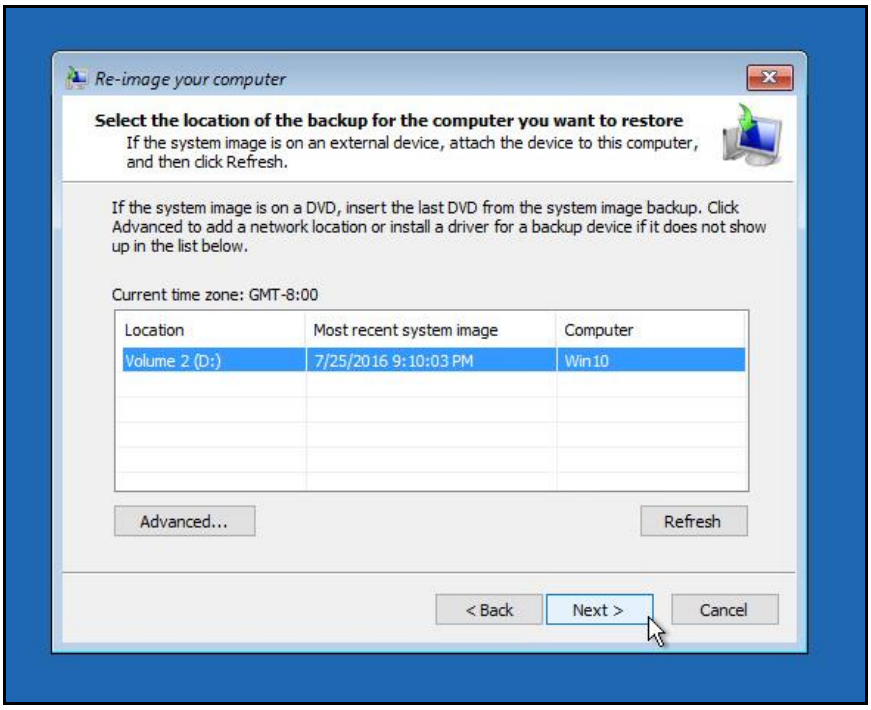
4. Login with an administrative account, by clicking on **Administrator**.



5. Click **Select a system image**, then click **Next**.



6. Select the location that contains the system image to restore from. If you do not see the image available, then



- Click **Advanced**, and install the required driver for the removable drive to be accessed, if the system image was copied to a removable drive attached to the server.

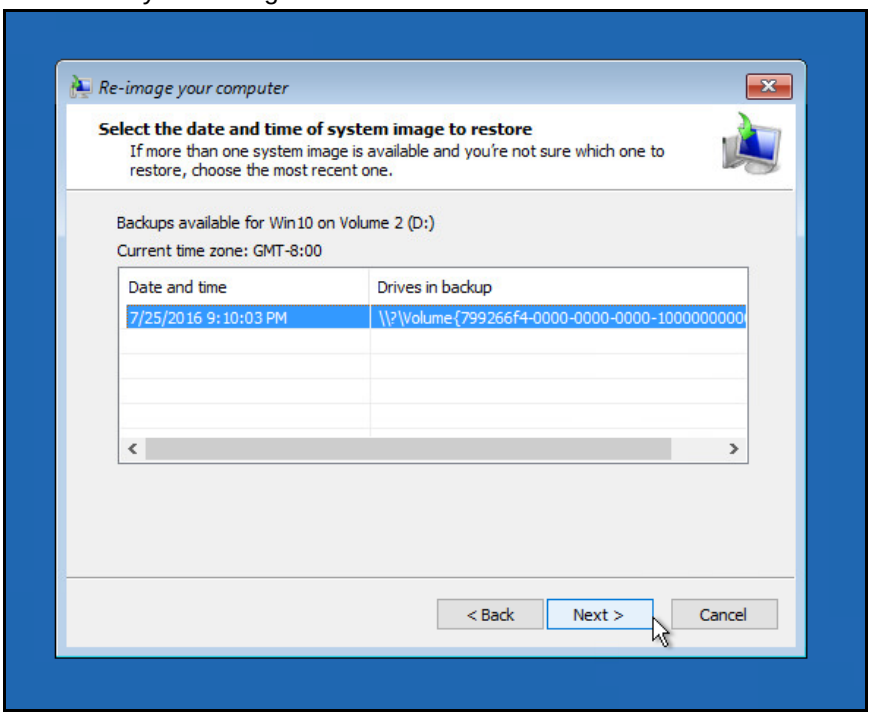
  To install a driver, the driver must be located on the local system. You cannot install a driver from the network.

- Click **Advanced**, and browse to the remote shared folder which contains the system image, if the system image was copied to a network path.

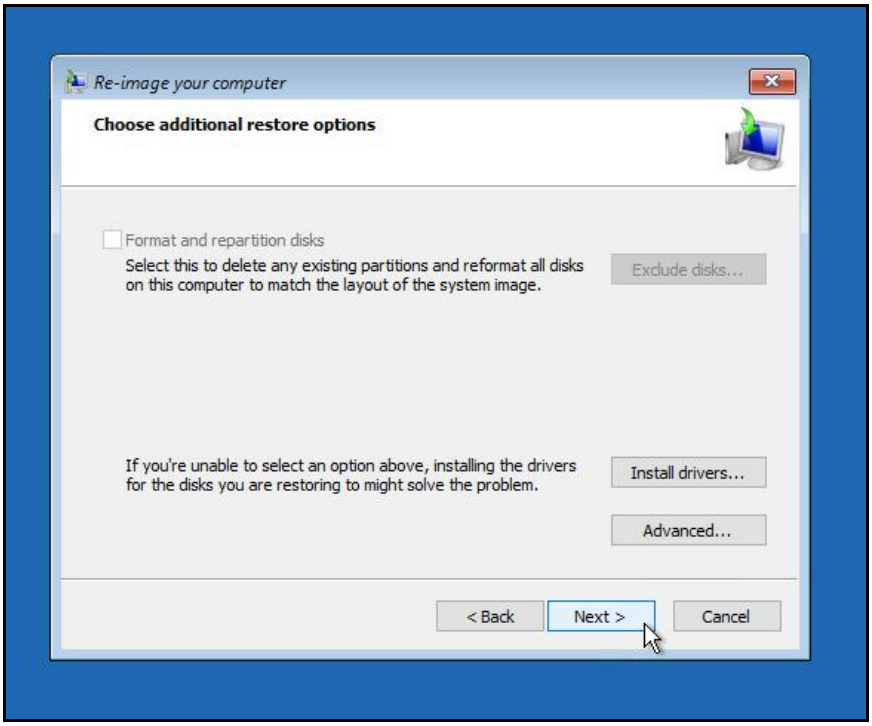
  For domain environment, if the backup storage location is on a computer that is a member of that domain, then the computer containing the storage location should be on the IPsec boundary, to be accessible by non domain computer.

  When a computer boots into Windows Recovery Environment, it becomes a non domain computer, therefore, cannot access the usual network shares. Only those computers that allow non domain computers to access the share can be used as a backup storage location in this way.

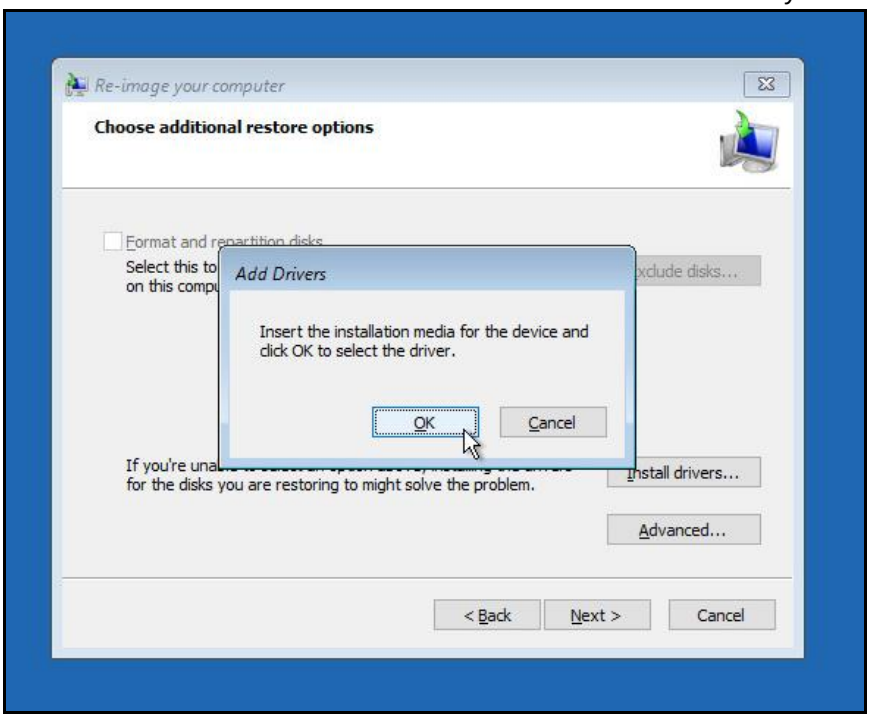
7. Select the system image to restore.



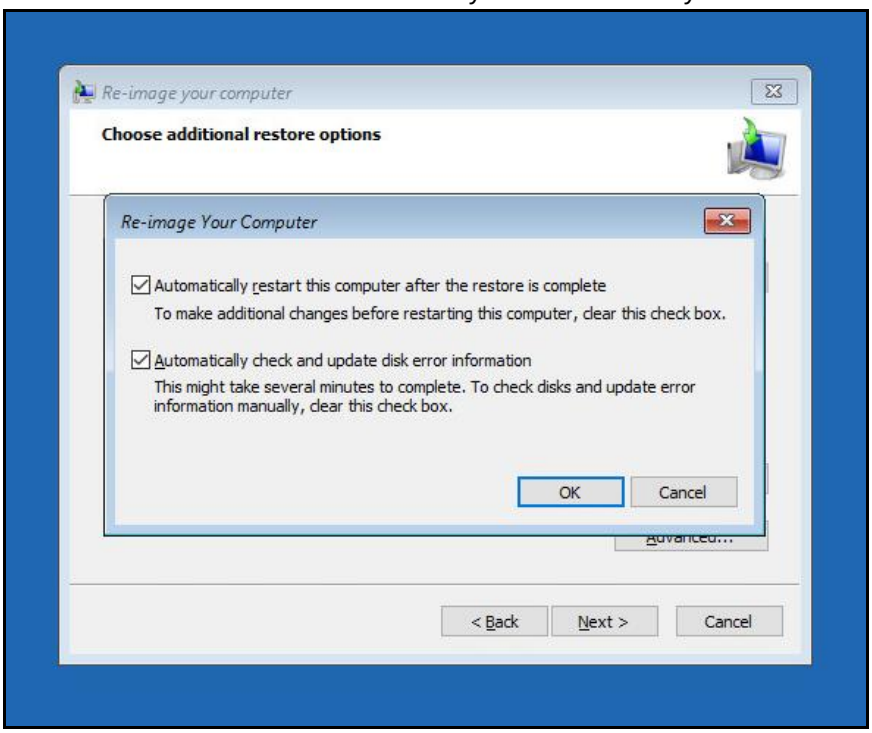
8. On the **Choose additional restore options** page.



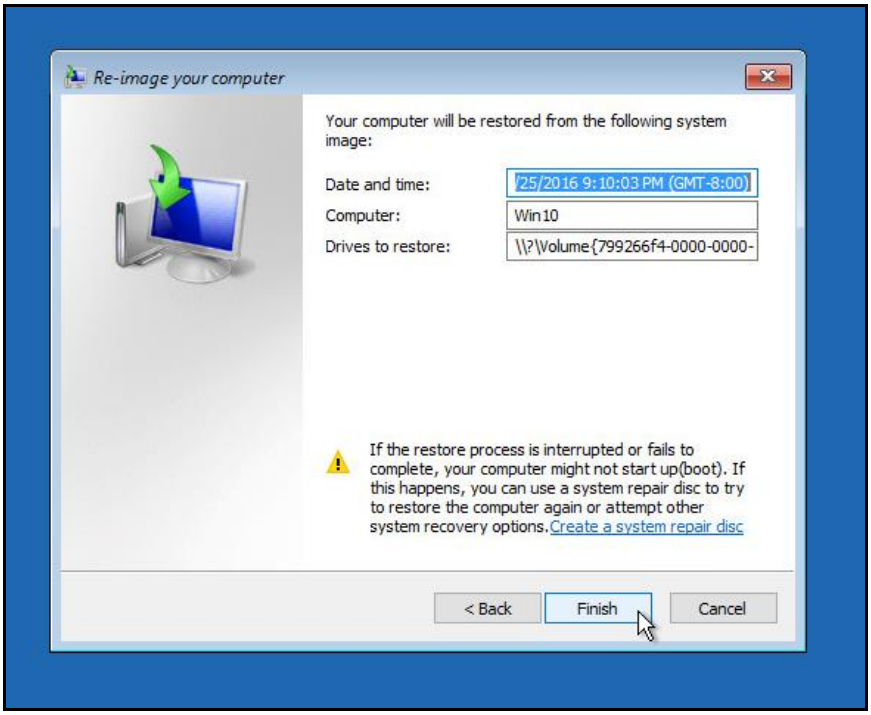
Click **Install drivers** to install device drivers for the hardware that you are recovering to.



Click **Advanced** to specify whether the computer is automatically restarted and the disks are checked for errors immediately after the recovery.



9. Confirm the details for the restoration, and then click **Finish** to start the recovery process.



Important: Do not interrupt the restore process.

The recovery will succeed as long as all the critical volumes (e.g. volumes containing operating system components) are recovered.